# Service Manua

Vol. 2

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Block Diagrams

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Sec. 8 Circuit Board Diagrams



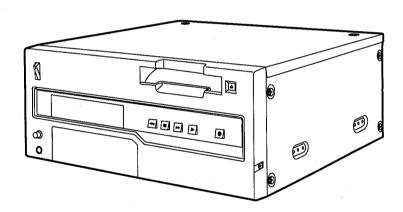
Digital Video Cassette Play

– e

AJ-D440P/⊟

Digital Video Cassette Record

AJ-D450P/**=** 



Please refer to the Service Manual Volume 1 (order No. VSD9907M904A) for Operating Instructions, Service Information, Maintenance & Mechanical Adjustments, Electrical Adjustments and Expoded Views & Replacement Parts List.



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# **△ WARNING**

This service information is designed for experienced repair technicians only and is not designed for use by the general public. It does not contain warnings or cautions to advise non-technical individuals of potential dangers in attempting to service a product. Products powered by electricity should be serviced or repaired only by experienced professional technicans. Any attempt to service or repair the product or products deal with in this service manual by anyone else could result in serious injury or death.

# INTRODUCTION

This service manual contains echnical information which will allow service personnels to understand and sercice the DVCPRO Studio VTR AJ-D440P/E and AJ-D450P/E.

If the part or circuit is changed or modified, this information will be followed by supplimentary service manual to be filed with original manual.

Vol. 2

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# 

#### **GENERAL**

Power supply:

AC 120 V, 50 - 60 Hz

Power consumption:

AJ-D440; 120 W AJ-D450; 150 W

Operating ambient humidity:

Operating ambient temperature: 41 YF to 104 YF (5 YC to 40 YC) 10% to 90% (no condensation)

Weight:

AJ-D440; 33 lbs (15 kg) AJ-D450; 34.98 lbs (15.9 kg)

Dimensions (W  $\times$  H  $\times$  D):

16-3/4 × 6-15/16 ×16-3/8 inches

(424 × 175 × 415 mm)

**Recording format:** 

DVCPRO format

Recording tracks:

Digital video Recorded in sub-code area 2channels

Time code: Digital audio:

1 track Cue Track: 1 track Control (CTL);

Tape speed:

33.820 mm/sec

Recording time:

184 minutes (with AJ-5P92LP) 66 minutes (with AJ-P66MP)

FF/REW time:

1/4-inch thin magnetic layer metal tape Less than 3 min (with AJ-5P92LP)

Less than 2 min (with AJ-P66MP) ±0 frame (using time code)

Editing accuracy\*: Tape timer accuracy: Servo lock time:

±1 frame (using continuous CTL signal)

Less than 0.5 sec. (color framing/

standby ON)

8 bits

#### **VIDEO**

(Digital video)

Sampling frequencies:

Y; 13.5 MHz/PB, PR; 3.375 MHz

Quantizing: Error correction:

Reed-Solomon product code

(Digital IN/analog component OUT)

Video bandwidth:

Y; 30 Hz to 5.5 MHz (±1.0 dB)

PB. PR: 30 Hz to 1.0 MHz (±1.0 dB)

S/N ratio: K factor:

Better than 56 dB Less than 2%

(Analog component IN/component OUT)

Video bandwidth:

Y; 30 Hz to 5.5 MHz (-1.5 dB to +1.0 dB)

Рв, Pr; 30 Hz to 1.0 MHz

(-2.0 dB to +1.0 dB)

S/N ratio: K factor:

Better than 55 dB Less than 2%

(Analog composite IN/composite OUT)

Video bandwidth:

Y; 30 Hz to 4.5 MHz (-1.5 dB to +1.0 dB) Less than 4%

DG: DP:

Less than 3Y Better than 20 ns Less than 3% Better than 48 dB

Y/C delay: K factor: S/N ratio:

(Video input connector)\*

Analog component input\*:

BNC×3 (Y, PB, PR) Y; 1.0 Vp-p, 75Ω

 $P_B$ ,  $P_R$ , 0.486/0.7 Vp-p switchable,  $75\Omega$ (75% color bar, 7.5% setup)

Analog composite input\*:

S VIDEO input\*:

BNC×2, loop-through, 75 $\Omega$  on/off S terminal (4-pin)×1

Y: 1.0 Vp-p, 75Ω

C; 0.286 Vp-p (burst),  $75\Omega$ 

Analog composite

Reference input:

BNC×2, loop-through, 75 $\Omega$  on/off Complies with SMPTE259M-C standard,

Serial digital component input

(option)\*:

BNC×2, active through

(Video output connector)

Analog component output:

BNC×3 (Y, PB, PR)

Y; 1.0 Vp-p, 75Ω

P<sub>B</sub>, P<sub>R</sub>; 0.486/0.7 Vp-p switchable,  $75\Omega$ 

(75% color bar, 7.5% setup)

Analog composite output: BNC×3

Video1/video2/video3 (superimpose

on/off)

S VIDEO output:

S terminal (4-pin)×1 Y; 1.0 Vp-p, 75Ω

C; 0.286 Vp-p (burst),  $75\Omega$ 

Serial digital component output

(option):

Complies with SMPTE259M-C standard,

BNC×3

(Video signals adjustment)

+3 dBVideo output gain:

Video output chroma gain: ±3 dB ±30Υ Video output hue:

±15 IRE Video output setup: Video output sync phase: ±2 us

±180Y

Control from ENCODER **REMOTE** connector

**AUDIO** 

(Digital audio)

Sampling frequencies:

Video output SC phase:

48 kHz

Quantizing:

16 bits

20 Hz to 20 kHz (±1.0 dB) Frequency response: Dynamic range:

Better than 85 dB (1 kHz, emphasis OFF,

"A" weighted) Less than 0.1% (1 kHz, emphasis OFF,

Distortion: standard level)

Less than -80 dB (1 kHz, between

2 channels) Below measurable limits

Wow & flutter:

Headroom: T1=50 µs/T2=15 µs (on/off automatic) De-emphasis:

(Cue track)

Crosstalk:

Frequency response:

300 Hz to 6 kHz ±3 dB

(Audio input connector)\*

Analog input (CH1/CH2):

XLR×2, 600Ω/high impedance selectable,

+4/0/-20/-60 dBu

Digital input (CH1/CH2) (option): BNC×1, AES/EBU format

Serial digital input (option):

Complies with SMPTE259M-C, 272M

standard (BNC)

(Audio output connector)

Analog output (CH1/CH2): Digital output (CH1/CH2)

(option):

XLR×2, low impedance, +4/0/-20 dBu

BNC×1, AES/EBU format

Serial digital output (option): **Monitor output:** 

Complies with SMPTE259M-C, 272M standard (BNC)

Headphones:

Phono×1, 600  $\Omega$ , –8 dBV Variable level, 1/4" phone, 8Ω

Other input/output connector

Time code input\*: Time code output: BNC×1, 0.5 to 8 Vp-p BNC×1, 2.0 Vp-p

RS-422A input/output: RS-232C:

D-sub 9-pin, RS-422A interface D-sub 25-pin, RS-232C interface

D-sub 15-pin **Encoder remote:** 

Weight and dimensions when shown are approximately. Specifications are subject to change without notice.

<sup>\*</sup> Items marked with an asterisk ( \* ) indicate AJ-D450 only.

# **IMPORTANT**

"Unauthorized recording of copyrighted television programs, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."

# AJ-0440p AJ-0450p



#### CAUTION

RISK OF ELECTRIC SHOCK DO NOT OPEN



CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.



The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.



The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

#### **CAUTION:**

To reduce the risk of fire or shock hazard and annoying interference, use the recommended accessories only.

# **WARNING:**

To reduce the risk of fire or shock hazard, do not expose this equipment to rain or moisture.

### CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, REFER MOUNTING OF THE OPTIONAL INTERFACE BOARD TO AUTHORIZED SERVICE PERSONNEL.

#### FCC Note:

This device complies with Part 15 of the FCC Rules. To assure continued compliance follow the attached installation instructions and do not make any unauthorized modifications.

This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

 $\square$  is the safety information.

- Do not insert fingers or any objects into the video casette holder.
- Avoid operating or leaving the unit near strong magnetic fields. Be especially careful of large audio speakers.
- Avoid operating or storing the unit in an excessively hot, cold, or damp environment as this may result in damage both to the recorder and to the tape.
- Do not spray any cleaner or wax directly on the unit.
- If the unit is not going to be used for a length of time, protect it from dirt and dust.
- Do not leave a cassette in the recorder when not in
- Do not block the ventilation slots of the unit.

- Use this unit horizontally and do not place anything on the top panel.
- Cassette tape can be used only for one-side, one direction recording. Two-way or two-track recordings cannot be made.
- Cassette tape can be used for either Color or Black & White recording.
- Do not attempt to disassemble the recorder. There are no user serviceable parts inside.
- If any liquid spills inside the recorder, have the recorder examined for possible damage.
- Refer any needed servicing to authorized service personnel.

# AJ-19490 AJ-19450

# **Specifications**

#### **GENERAL**

Power supply:

 $AC.220 \text{ V} - 240 \text{ V} \cdot 50 - 60 \text{ Hz}$ 

Power consumption:

A.J-D440: 130 W AJ-D450; 150 W

Operating ambient temperature: 51°C to 40°1°C

Operating ambient humidity:

10% to 90% (no condensation)

Weight:

AJ-D440; 14.6 kg AJ-D450, 15.5 kg

Dimensions (W  $\times$  H  $\times$  D):

424 × 175 × 415 mm **DVCPRO** format

Recording format:

Digital video

Recording tracks:

Recorded in sub-code area Time code;

Digital audio; 2 channels Cue Signal; 1 track Control (CTL); 1 track

Tape speed:

33.854 mm/sec.

Recording time:

184 minutes (with AJ-5P92LP)

66 minutes (with AJ-P66MP)

Tape: FF/REW time: 1/4-inch thin magnetic layer metal tape Less than 3 min (with AJ-5P92LP)

Less than 2 min (with AJ-P66MP)

Editing accuracy\*: Tape timer accuracy: ±0 frame (using time code)

±1 frame (using continuous CTL signal)

Servo lock time:

Less than 0.5 sec. (colour framing/standby ON)

#### **VIDEO**

(Digital video)

Sampling frequencies: Quantizing:

Y; 13.5 MHz/PB, PR; 3.375 MHz

8 bits

Error correction:

Reed-Solomon product code

(Digital IN/analogue component OUT)

Video bandwidth:

Y; 25 Hz to 5.5 MHz (±1.0 dB)

PB. PR; 25 Hz to 1.3 MHz (±1.0 dB) Better than 56 dB

S/N ratio:

K factor:

Less than 2%

(Analogue component IN/component OUT)

Video bandwidth:

Y; 25 Hz to 5.5 MHz (-1.5 dB to +1.0 dB)

Рв, Pr, 25 Hz to 1.3 MHz

(-2.0 dB to +1.0 dB)

S/N ratio:

Better than 55 dB

K factor:

Less than 2%

(Analogue composite IN/composite OUT)

Video bandwidth:

Y; 25 Hz to 5.5 MHz (-1.5 dB to +1.0 dB) Less than 4%

DG: DP:

Less than 3Y Better than 20 ns

Y/C delay: K factor:

Less than 3% Better than 48 dB

S/N ratio:

(Video input connector)\*

Analogue component input\*:

BNC×3 (Y, PB, PR)

Y; 1.0 Vp-p, 75Ω

P<sub>B</sub>, P<sub>R</sub>; 0.7 Vp-p, 75Ω (100% colour bar) BNC×2, loop-through,  $75\Omega$  on/off

Analogue composite input\*: S VIDEO input\*:

S terminal (4-pin) × 1

Y; 1.0 Vp-p, 75Ω C; 0.3 Vp-p (burst), 75Ω

Reference input:

Analogue composite

Serial digital component input

(option)\*:

BNC  $\times$  2, loop-through, 75 $\Omega$  on/off Complies with EBU Tech. 3267-E standard, BNC × 2, active through

\* Items marked with an asterisk ( \* ) indicate AJ-D450 only.

(Video output connector)

Analogue component output:

Analogue composite output:

BNC × 3 (Y, PB, PR)

Y; 1.0 Vp-p, 75Ω

P<sub>B</sub>, P<sub>R</sub>; 0.7 Vp-p, 75Ω (100% colour bar)

Video1/video2/video3 (superimpose

on/off)

S VIDEO output: S terminal (4-pin) × 1

Y; 1.0 Vp-p, 75Ω

C; 0.3 Vp-p (burst),  $75\Omega$ 

Serial digital component output

(option):

Complies with EBU Tech. 3267-E

standard, BNC × 3

(Video signals adjustment)

Video output gain:

Video output chroma gain:

Video output chroma phase:

Video output black level: Video output sync phase: ±3 dB +3 dB ±30Υ ±100 mV

±2 μsec ±180Υ Video output SC phase:

Control from ENCODER REMOTE connector

**AUDIO** 

(Digital audio)

Sampling frequencies:

48 kHz 16 bits

Quantizing: Frequency response:

20 Hz to 20 kHz (±1.0 dB)

Dynamic range:

Better than 85 dB (1 kHz, emphasis OFF,

"A" weighted)

Less than 0.1% (1 kHz, emphasis OFF, Distortion:

standard level)

Less than -80 dB (1 kHz, between 2 Crosstalk: channels)

Below measurable limits

Wow & flutter: Headroom:

De-emphasis:

18 dB T1 = 50 µsec/T2 = 15 µsec (on/off

automatic)

(Cue track)

Frequency response:

300 Hz to 6 kHz ±3 dB

(Audio input connector)\*

Analogue input (CH1/CH2):

XLR  $\times$  2, 600 $\Omega$ /high impedance selectable, +4/0/-20/-60 dBu Digital input (CH1/CH2) (option): BNC  $\times$  1, AES/EBU format

Serial digital input (option):

Complies with EBU Tech. 3267-E standard (BNC)

(Audio output connector)

Analogue output (CH1/CH2): Digital output (CH1/CH2)

Serial digital output (option):

(option):

XLR × 2, low impedance, +4/0/-20 dBu

BNC × 1, AES/EBU format Complies with EBU Tech. 3267-E standard (BNC)

Monitor output:

Phono×1,  $600\Omega$ , -8 dBVVariable level, 1/4" phone, 8Ω

Other input/output connector

Time code input\*: Time code output:

Headphones:

BNC × 1, 0.5 to 8 Vp-p BNC × 1, 2.0 Vp-p

RS-422A input/output: RS-232C: **Encoder remote:** 

D-sub 9-pin, RS-422A interface D-sub 25-pin, RS-232C interface

D-sub 15-pin

Weight and dimensions shown are approximate. Specifications are subject to change without notice.

# Caution for AC Mains Lead

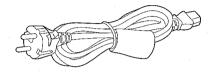
#### FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

This product is equipped with 2 types of AC mains cable. One is for continental Europe, etc. and the other one is only for U.K.

Appropriate mains cable must be used in each local area, since the other type of mains cable is not suitable.

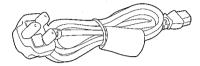
### FOR CONTINENTAL EUROPE, ETC.

Not to be used in the U.K.



#### FOR U.K. ONLY

If the plug supplied is not suitable for your socket outlet, it should be cut off and appropriate one fitted.



### FOR U.K. ONLY

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.

A 13 amp fuse is fitted in this plug.

Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 13 amps and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark ⊕ or the BSI mark ♥ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

A replacement fuse cover can be purchased from your local Panasonic Dealer.

IF THE FITTED MOULDED PLUG IS UNSUITABLE FOR THE SOCKET OUTLET IN YOUR HOME THEN THE FUSE SHOULD BE REMOVED AND THE PLUG CUT OFF AND DISPOSED OF SAFELY. THERE IS A DANGER OF SEVERE ELECTRICAL SHOCK IF THE CUT OFF PLUG IS INSERTED INTO ANY 13 AMP SOCKET.

If a new plug is to be fitted please observe the wiring code as shown below.

If in any doubt please consult a qualified electrician.

WARNING: THIS APPLIANCE MUST BE EARTHED.

**IMPORTANT:** The wires in this mains lead are coloured in accordance with the following code:

Green-and-Yellow:

Earth

Blue:

Neutral

Brown:

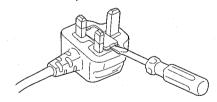
Live

As the colours of the wires in the mains lead of this appliance may not correspond with the coloured markings identifying the terminals in your plug, proceed as follows:

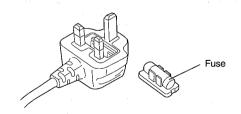
- The wire which is coloured GREEN-AND-YELLOW must be connected to the terminal in the plug which is marked with the letter E or by the Earth symbol ≟ or coloured GREEN or GREEN-AND-YELLOW.
- The wire which is coloured BLUE must be connected to the terminal in the plug which is marked with the letter N or coloured BLACK.
- The wire which is coloured BROWN must be connected to the terminal in the plug which is marked with the letter L or coloured RED.

### How to replace the fuse

1. Open the fuse compartment with a screwdriver.



2. Replace the fuse.



# AJ-0440<sub>E</sub> AJ-0450<sub>E</sub>

### **IMPORTANT**

"Unauthorized recording of copyrighted television programmes, video tapes and other materials may infringe the right of copyright owners and be contrary to copyright laws."

#### THIS APPARATUS MUST BE EARTHED

To ensure safe operation the three-pin plug must be inserted only into a standard three-pin power point which is effectively earthed through the normal house-hold wiring.

Extension cords used with the equipment must be three-core and be correctly wired to provide connection to earth. Wrongly wired extension cords are a major cause of fatalities.

The fact that the equipment operates satisfactorily does not imply that the power point is earthed and that the installation is completely safe. For your safety, if in any doubt about the effective earthing of the power point, consult a qualified electrician.

#### ■ DO NOT REMOVE PANEL COVER BY UNSCREW-ING

To reduce the risk of electric shock, do not remove cover. No user serviceable parts inside. And do not insert fingers or any other objects into the video cassette holder.

### **WARNING:**

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.

# **CAUTION:**

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSOIRES ONLY.

# **CAUTION:**

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, REFER MOUNTING OF THE OPTIONAL BOARD TO QUALIFIED SERVICE PERSONNEL.

# Operating precaution

Operation near any appliance which generates strong magnetic fields may give rise to noise in the video and audio singals. If this should be the case, deal with the situation by, for instance, moving the source of the magnetic fields away from the unit before operation.

#### **CAUTION:**

Do not install or place this unit in a bookcase, built-in cabinet or another confined space in order to maintain adequate ventilation. Ensure that curtains and any other materials do not obstruct the ventilation to prevent risk of electric shock or fire hazard due to overheating.

is the safety information.

# **Attention/Attentie**

- This apparatus contains a lithium battery for memory back-up.
- For the removal of the battery at the moment of the disposal at the end of the service life please consult your dealer.
- Do not throw away the battery. Instead, hand it in as hazardous waste.
- Dit apparaat bevat een lithiumbatterij voor memory back-up.
- Raadpleeg uw leverancier over de verwijdering van de batterij op het moment dat u het apparaat bij einde levensduur afdankt.
- Gooi de batterij niet weg, maar lever hem in als KCA.



# **SAFETY PRECAUTIONS**

#### **GENERAL GUIDELINES**

- When servicing, observe the original lead dress. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
- After servicing, see to it that all the protective devices such as insulation barriers, insulation papers shields are properly installed.
- After servicing, make the following leakage current checks to prevent the customer from being exposed to shock hazards.

#### LEAKAGE CURRENT COLD CHECK

- Unplug the AC cord and connect a jumper between the two prongs on the plug.
- 2. Measure the resistance value, with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the equipment such as screwheads, connectors, control shafts, etc. When the exposed metallic part has a return path to the chassis, the reading should be between  $1M\Omega$  and  $5.2M\Omega$ .

When the exposed metal does not have a return path to the chassis, the reading must be  $\infty$ .

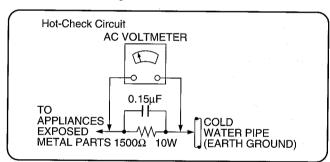


Figure 1

#### **LEAKAGE CURRENT HOT CHECK (See Figure 1.)**

- Plug the AC cord directly into the AC outlet.
   Do not use an isolation transformer for this check.
- 2. Connect a 1.5k $\Omega$ , 10 W resistor, in parallel with a 0.15 $\mu$ F capacitor, between each exposed metallic part on the set and a good earth ground such as a water pipe, as shown in Figure 1.
- Use an AC voltmeter, with 1000 ohms/volt or more sensitivity, to measure the potential across the resistor.
- Check each exposed metallic part, and measure the voltage at each point.
- Reverse the AC plug in the AC outlet and repeat each of the above measurements.
- 6. The potential at any point should not exceed 0.75 volts RMS. A leakage current tester (Simpson Model 229 equivalent) may be used to make the hot checks, leakage current must not exceed 1/2 milliamp. In case a measurement is outside of the limits specified, there is a possibility of a shock hazard, and the equipment should be repaired and rechecked before it is returned to the customer.

# **ELECTROSTATICALLY SENSITIVE (ES) DEVICES**

Some semiconductor (solid state) devices can be damaged easily by static electricity. Such components commonly are called Electrostatically Sensitive (ES) Devices. Examples of typical ES devices are integrated circuits and some field-effect transistors and semiconductor "chip" components. The following techniques should be used to help reduce the incidence of component damage caused by static electricity.

- Immediately before handling any semiconductor component or semiconductor-equipped assembly, drain off any electrostatic charge on your body by touching a known earth ground.
  - Alternatively, obtain and wear a commercially available discharging wrist strap device, which should be removed for potential shock reasons prior to applying power to the unit under test.
- After removing an electrical assembly equipped with ES devices, place the assembly on a conductive surface such as alminum foil, to prevent electrostatic charge buildup or exposure of the assembly.
- Use only a grounded-tip soldering iron to solder or unsolder ES devices.
- Use only an anti-static solder removal device classified as "anti-static" can generate electrical charges sufficient to damage ES devices.
- 5. Do not use freon-propelled chemicals. These can generate electrical charges sufficient to damage ES devices.
- 6. Do not remove a replacement ES device from its protective package until immediately before you are ready to install it. (most replacement ES devices are packaged with leads electrically shorted together by conductive foam, alminum foil or comparable conductive material).
- Immediately before removing the protective material from the leads of a replacement ES device, touch the protective material to the chassis or circuit assembly into which the device will be installed.
  - CAUTION: Be sure no power is applied to the chassis or circuit, and observe all other safety precautions.
- Minimize bodily motions when handling unpackaged replacement ES devices. (Otherwise hamless motion such as the brushing together of your clothes fabric or the lifting of your foot from a carpeted floor can generate static electricity sufficient to damage an ES device).

#### X-RADIATION

#### WARNING

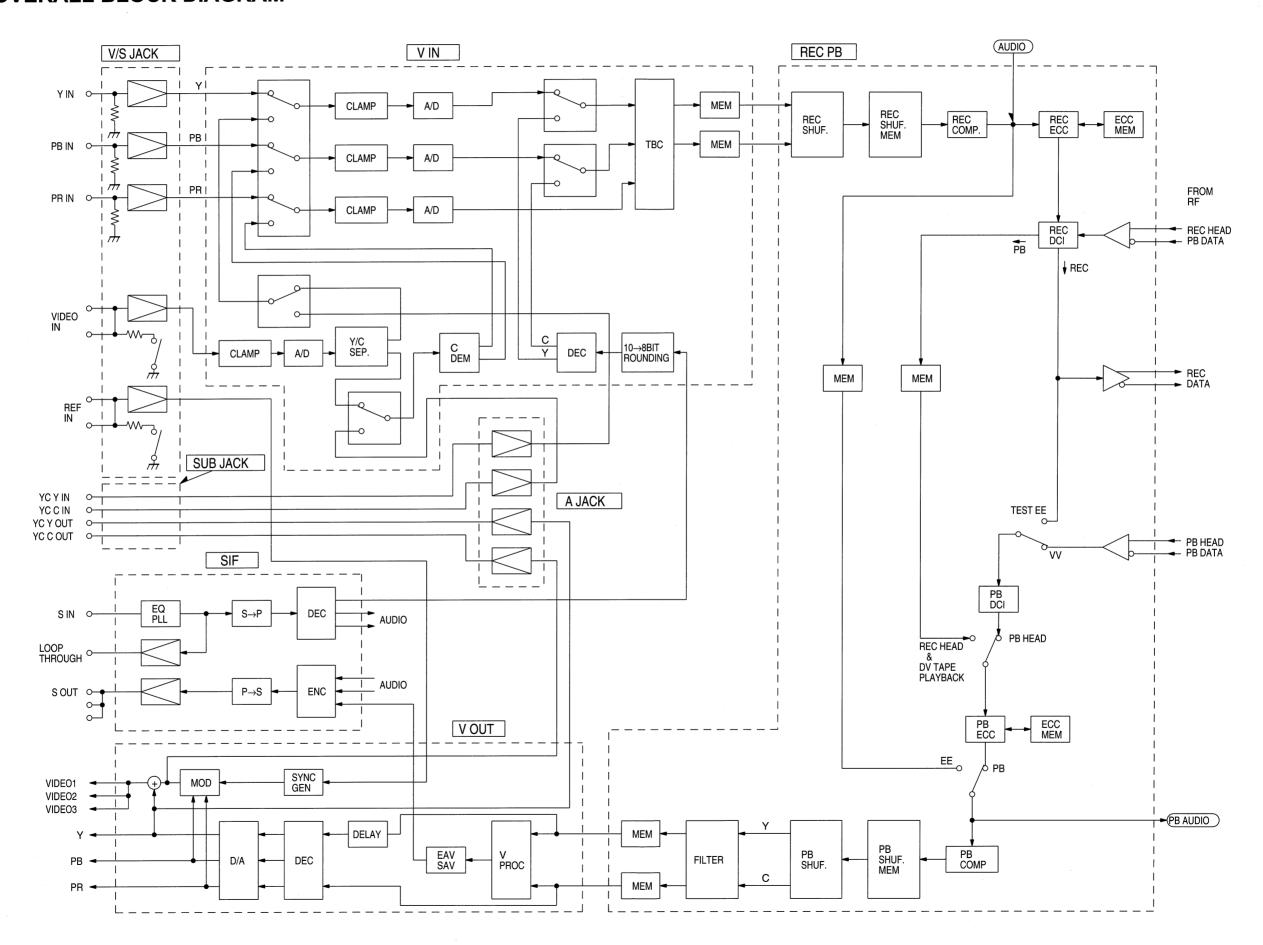
- 1. The potential source of X-Radiation in EVF sets is the High Voltage section and the picture tube.
- 2. When using a picture tube test jig for service, ensure that jig is capable of handling 10kV without causing X-Radiation.
- NOTE: It is important to use an accurate periodically calibrated high voltage meter.
- Measure the High Voltage. The meter (electric type) reading should indicate 2.5kV, ± 0.15kV. If the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure. To prevent an X-Radiation possibility, it is essential to use the specified picture tube.

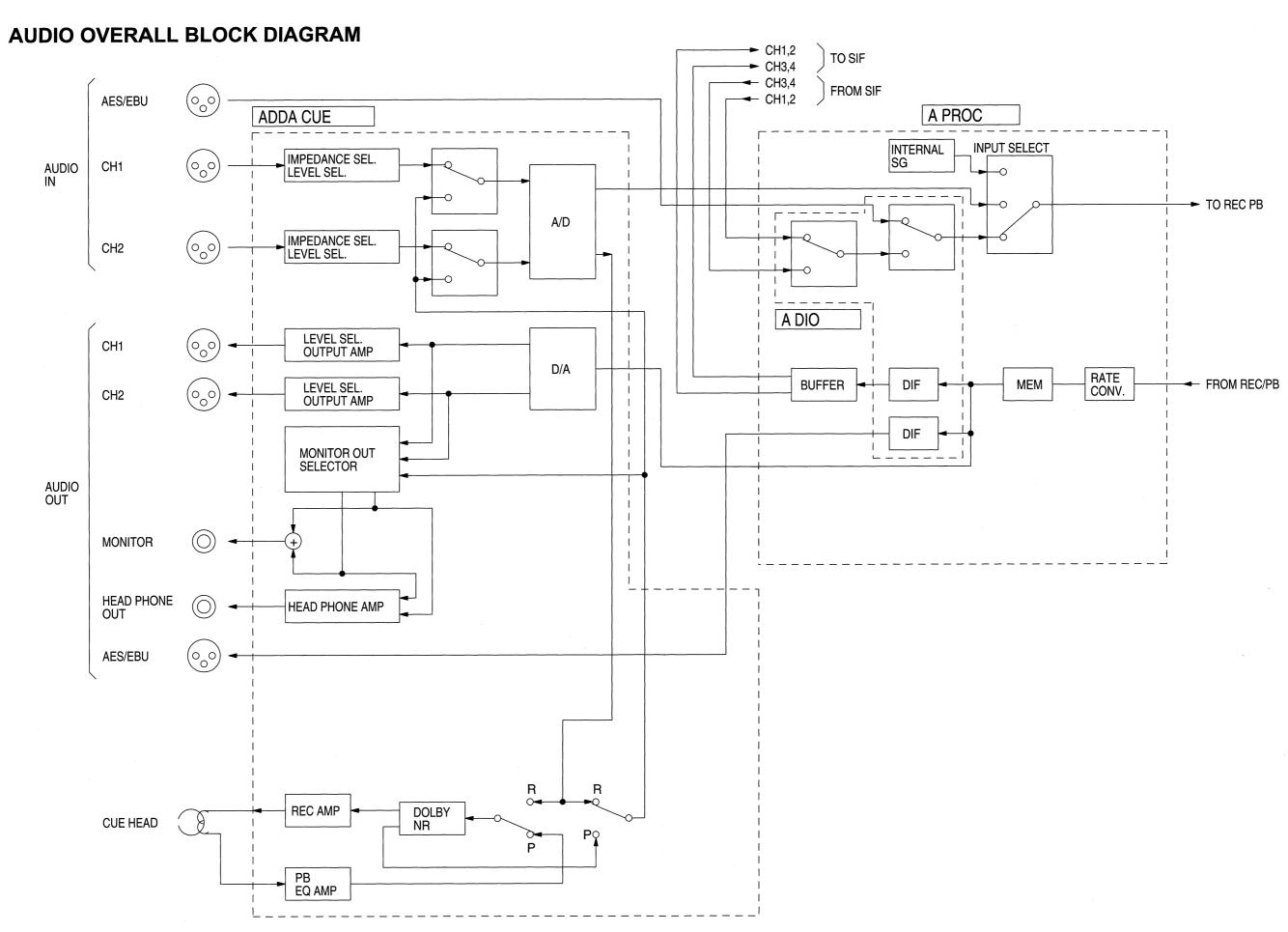
# **BLOCK DIAGRAM**

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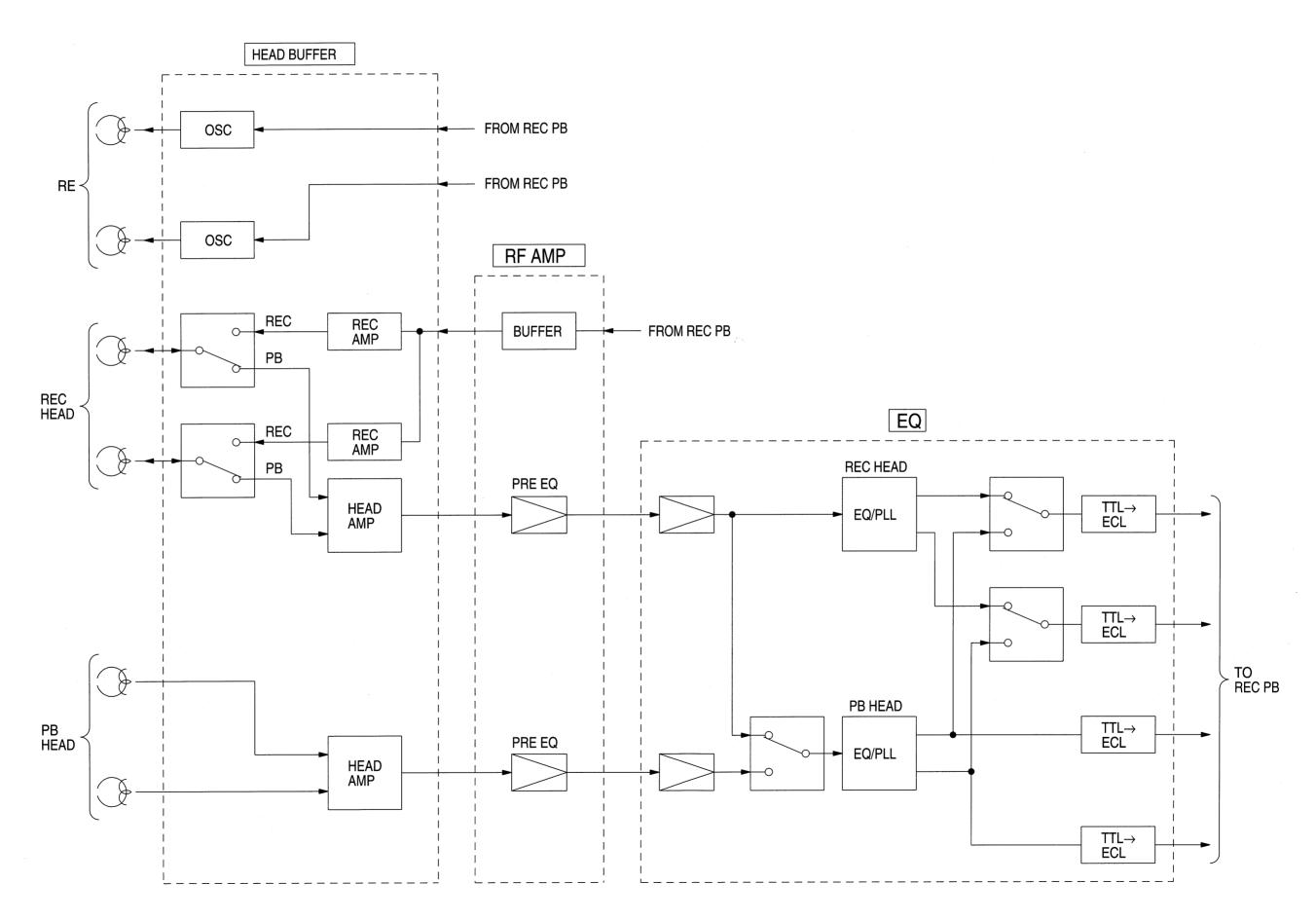
VIDEO OVERALL BLOCK DIAGRAM	BLK-1
AUDIO OVERALL BLOCK DIAGRAM	BLK-2
RF OVERALL BLOCK DIAGRAM	BLK-3
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F2: SYSCON BLOCK DIAGRAM	BLK-5
F4: V OUT 1/2 BLOCK DIAGRAM	BLK-6
F4: V OUT 2/2 BLOCK DIAGRAM	BLK-7
F5: REC PB BLOCK DIAGRAM	BLK-8
F6: V IN BLOCK DIAGRAM	BLK-9
F7: A PROC BLOCK DIAGRAM	BLK-10
F8: ADDA CUE 1/2 BLOCK DIAGRAM	BLK-11
F8: ADDA CUE 2/2 BLOCK DIAGRAM	BLK-12
H3 EQ BLOCK DIAGRAM	BLK-13
H4 RF AMP BLOCK DIAGRAM	BLK-14
HEAD BUFFER BLOCK DIAGRAM	BLK-15

# **VIDEO OVERALL BLOCK DIAGRAM**

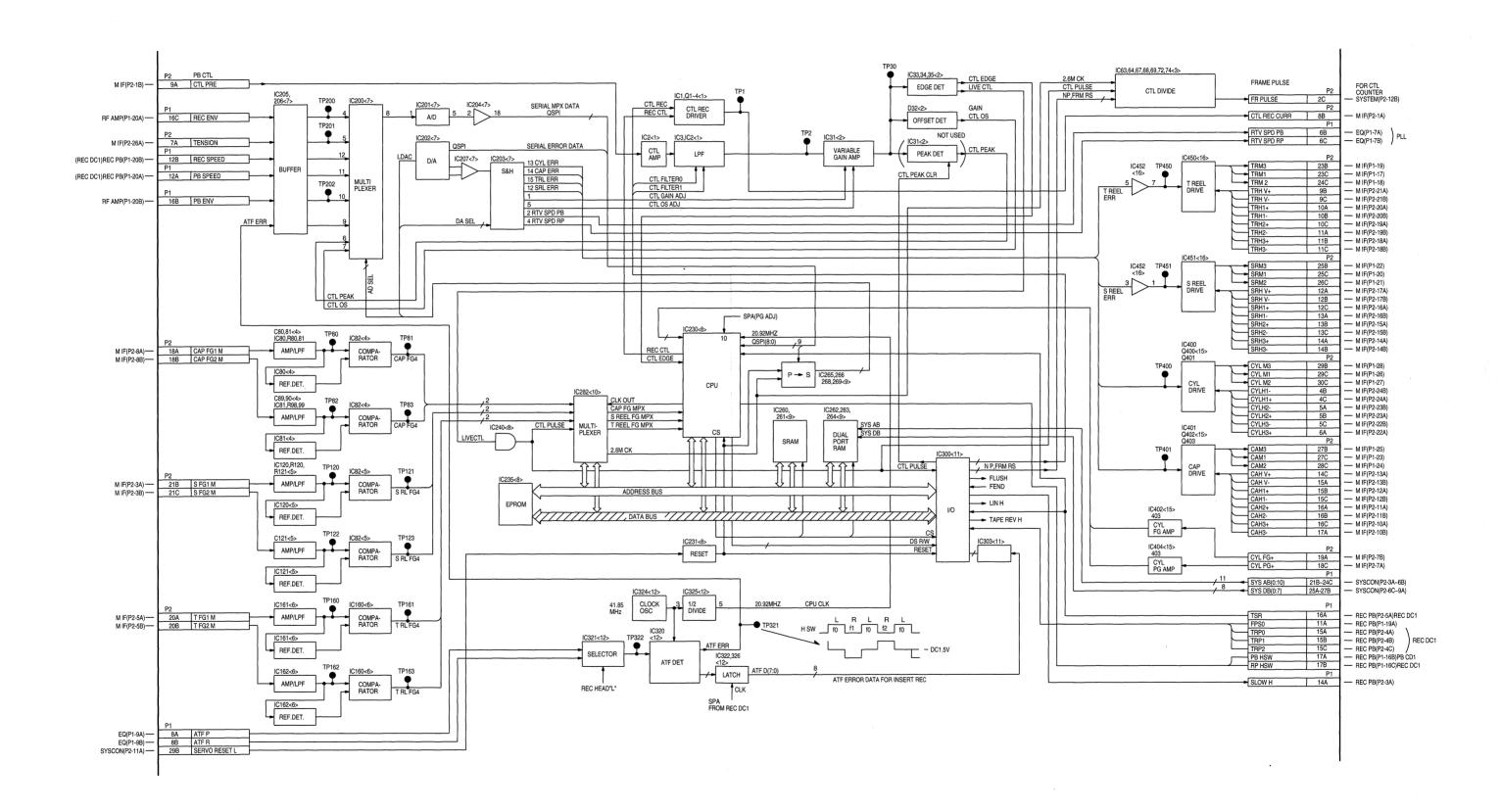




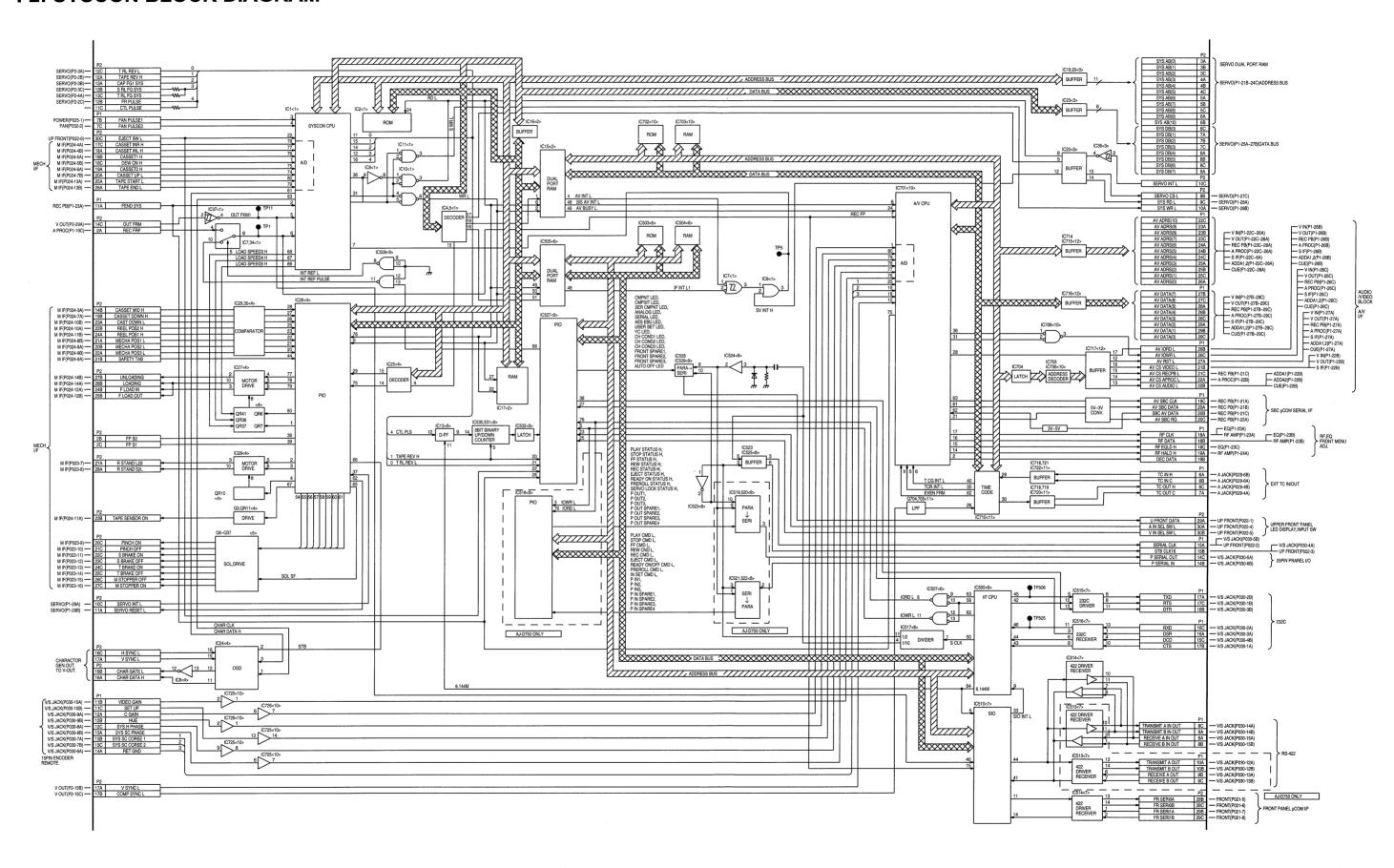
# RF OVERALL BLOCK DIAGRAM



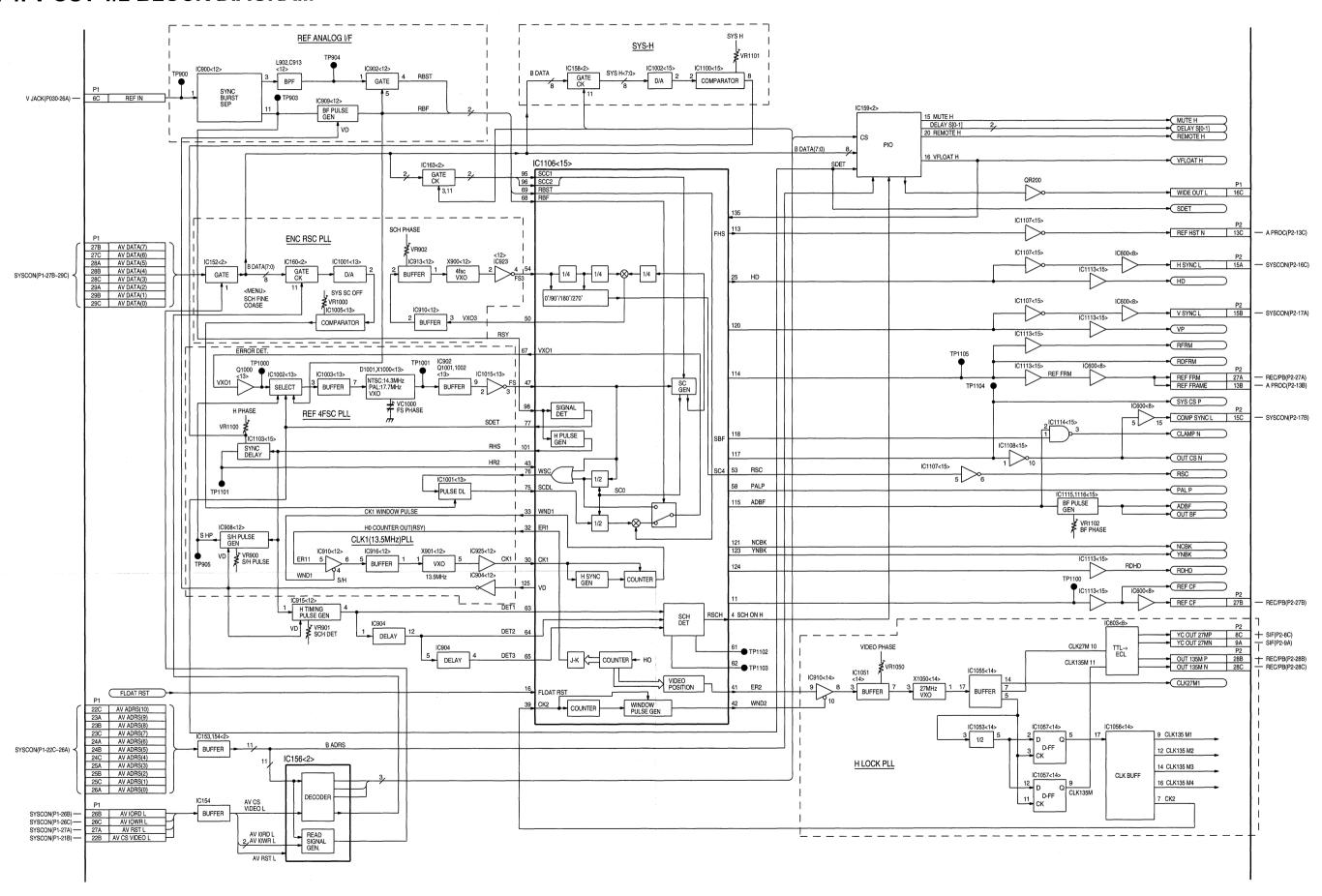
# F1: SERVO BLOCK DIAGRAM



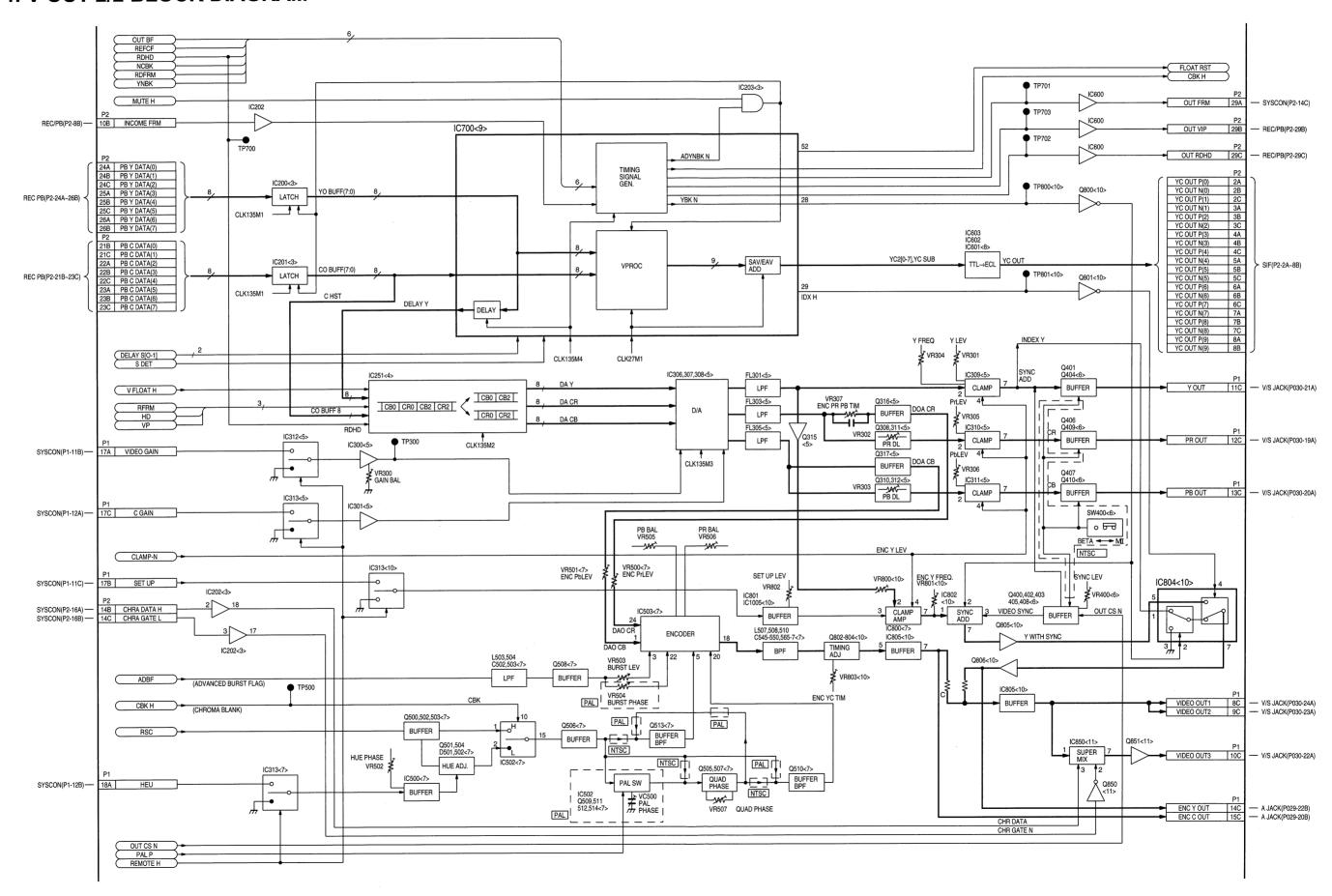
# **F2: SYSCON BLOCK DIAGRAM**



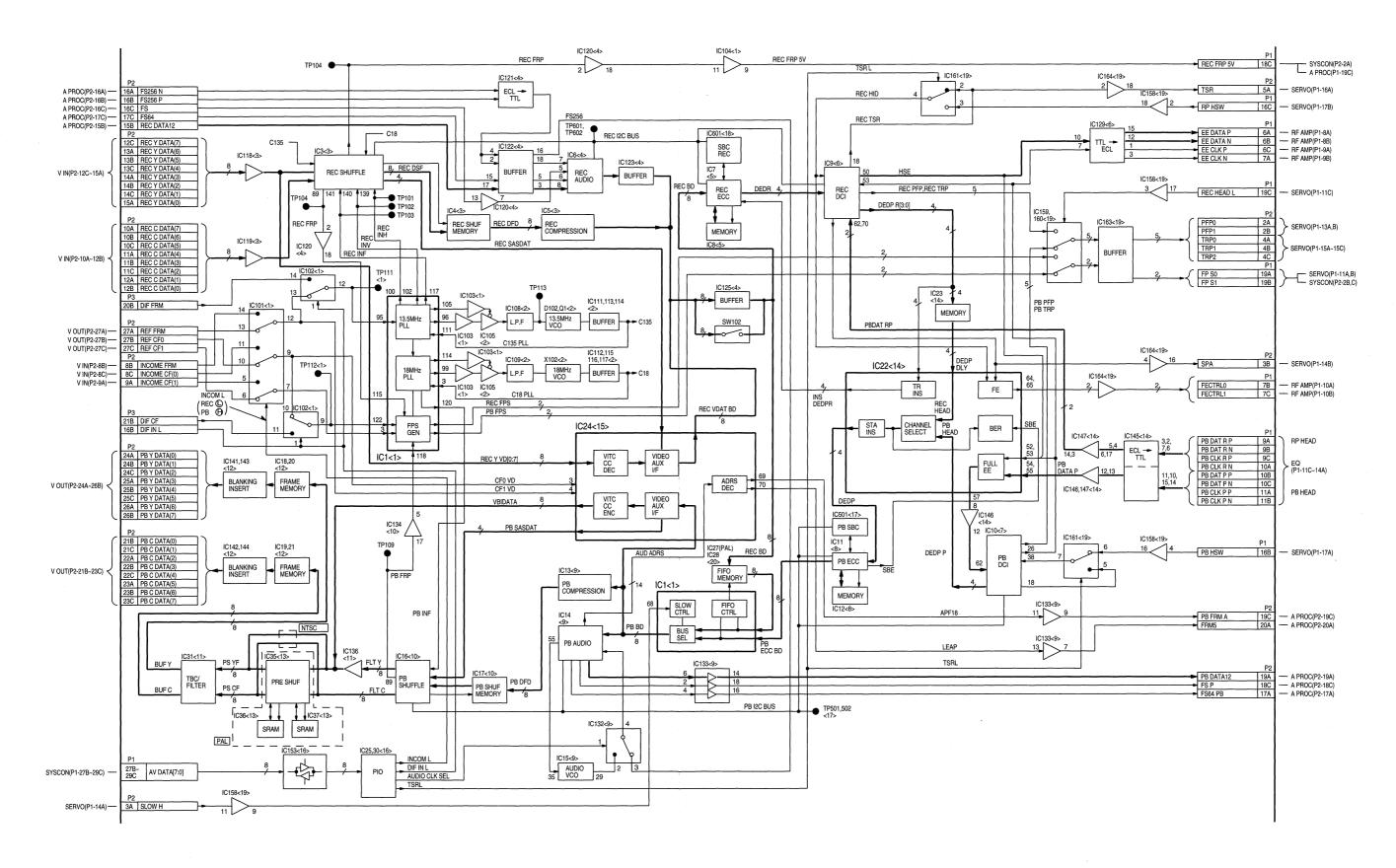
# F4: V OUT 1/2 BLOCK DIAGRAM



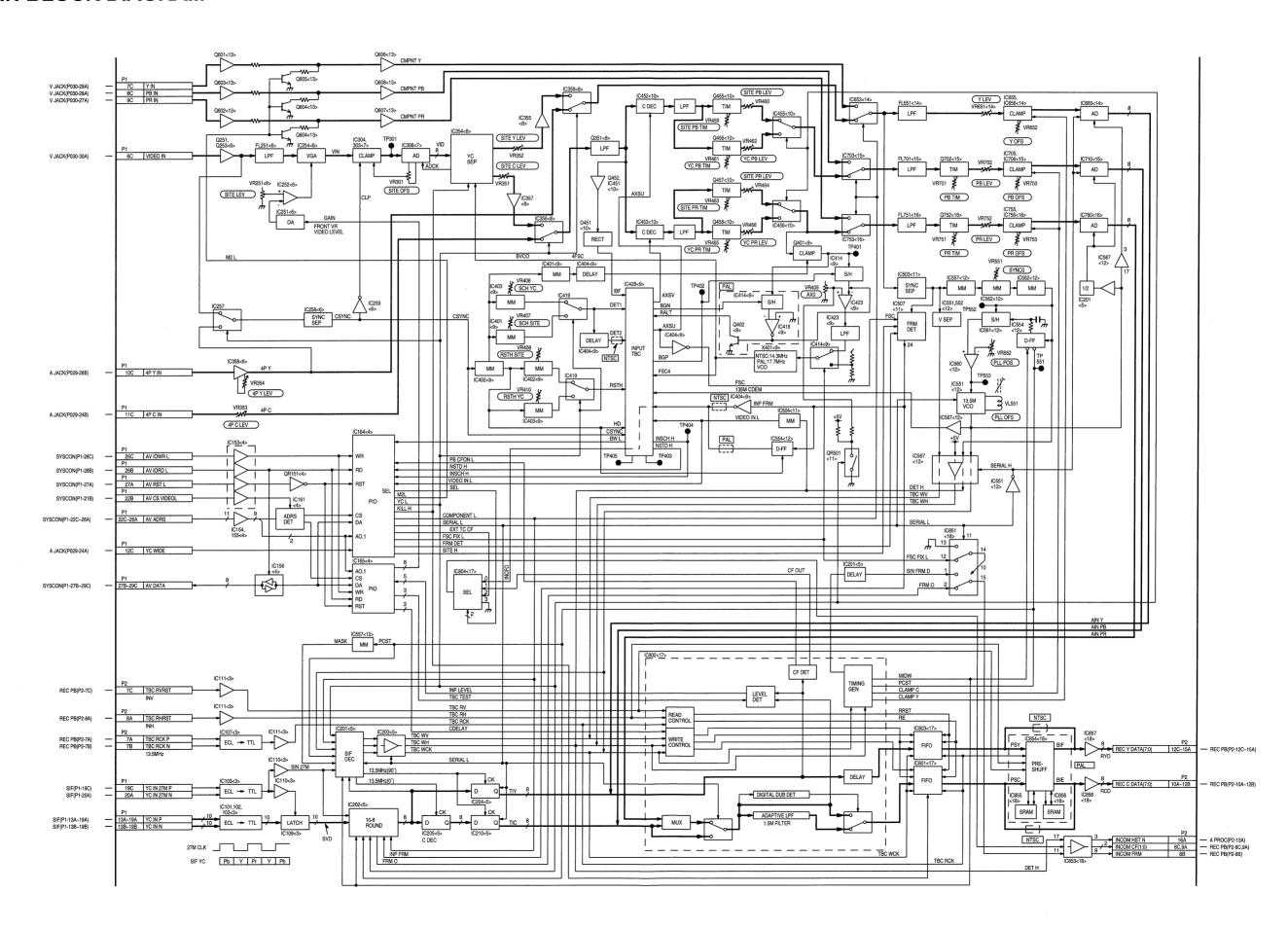
# F4: V OUT 2/2 BLOCK DIAGRAM



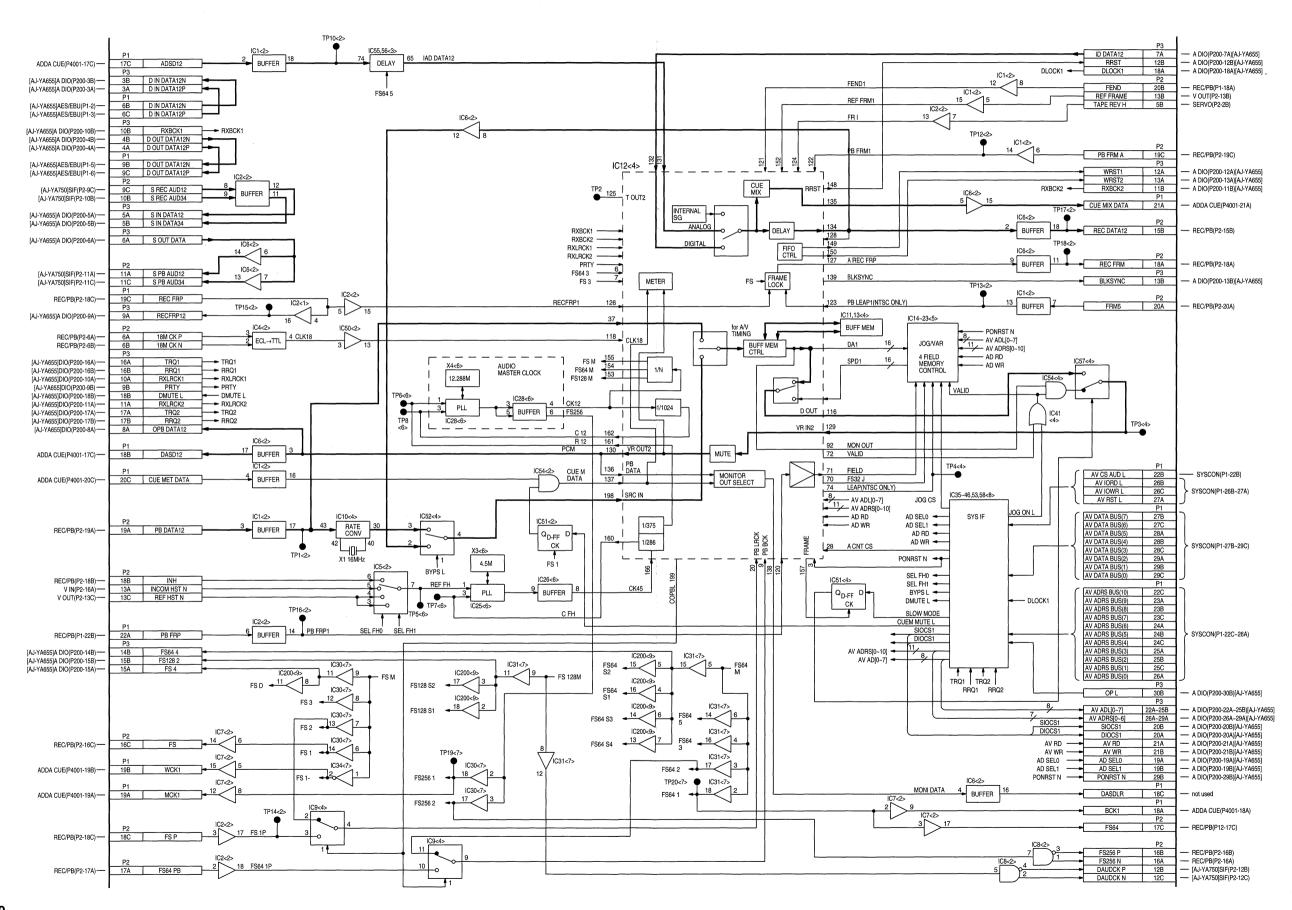
# F5: REC/PB BLOCK DIAGRAM



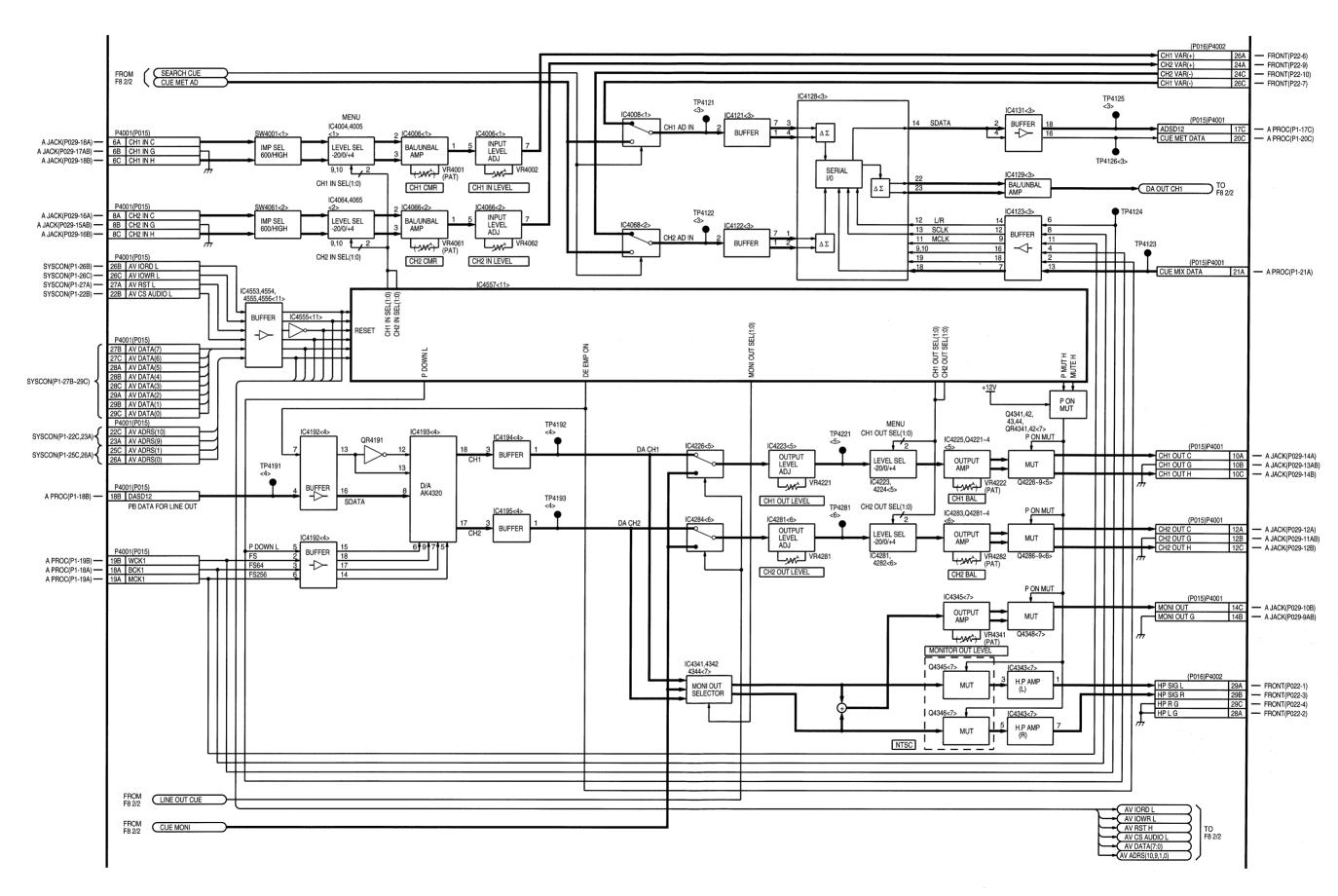
# **F6: V IN BLOCK DIAGRAM**



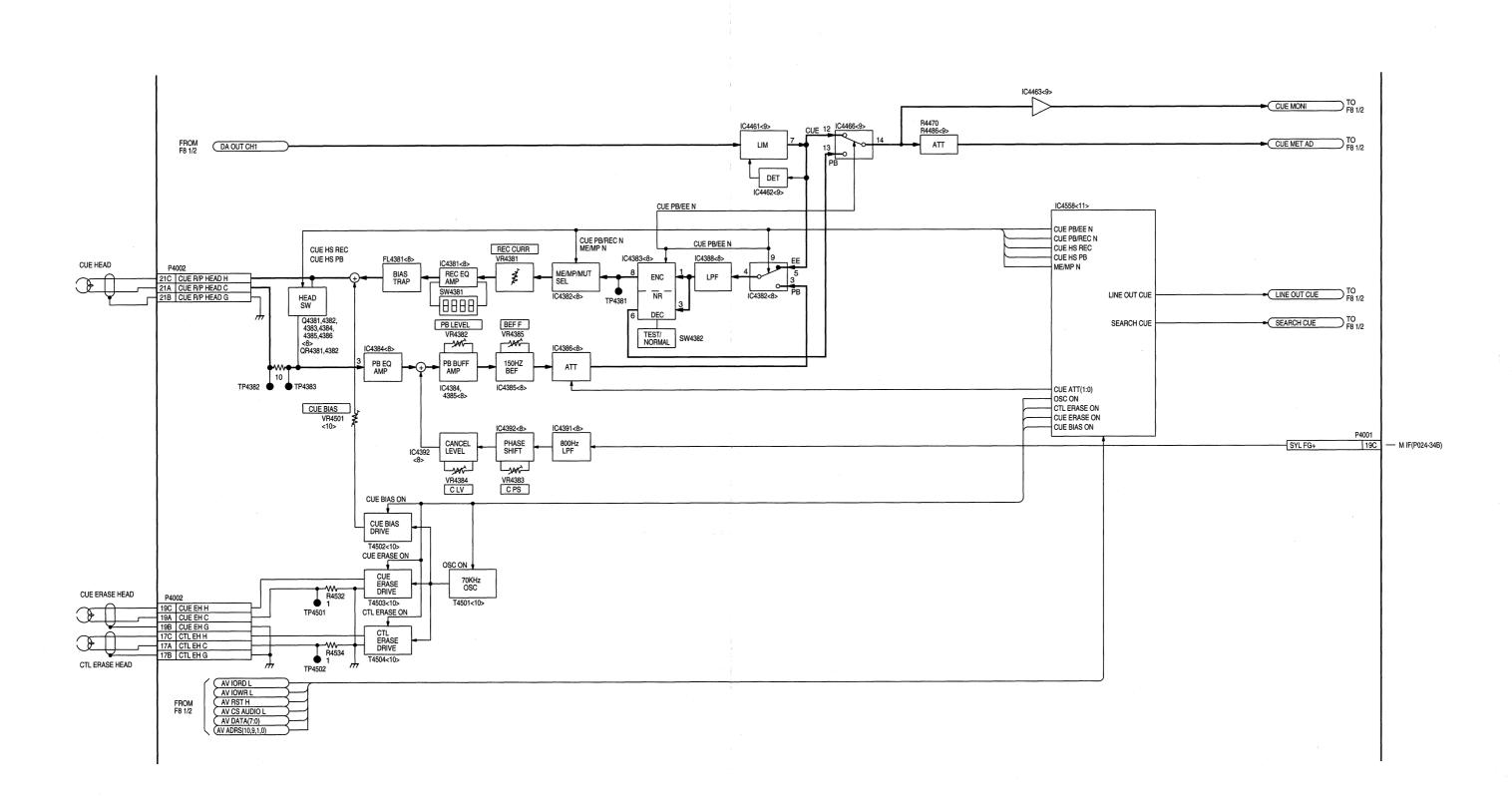
# F7: A PROC BLOCK DIAGRAM



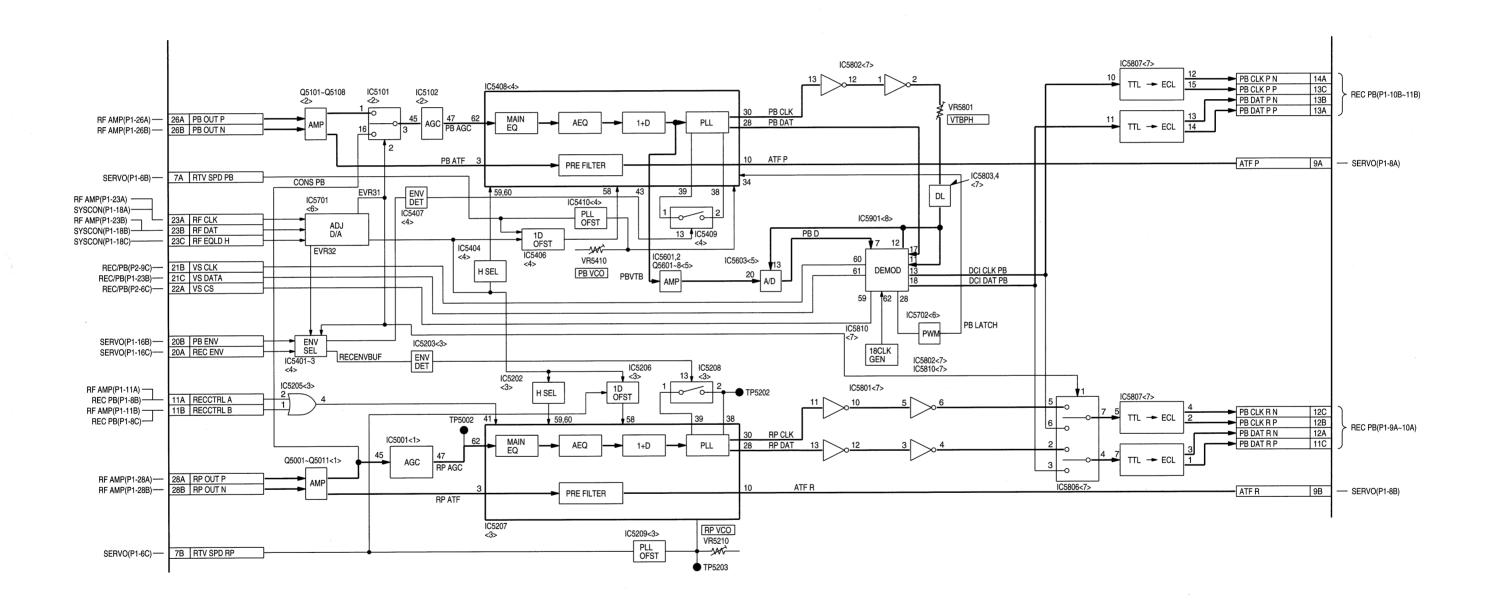
# F8: ADDA CUE 1/2 BLOCK DIAGRAM



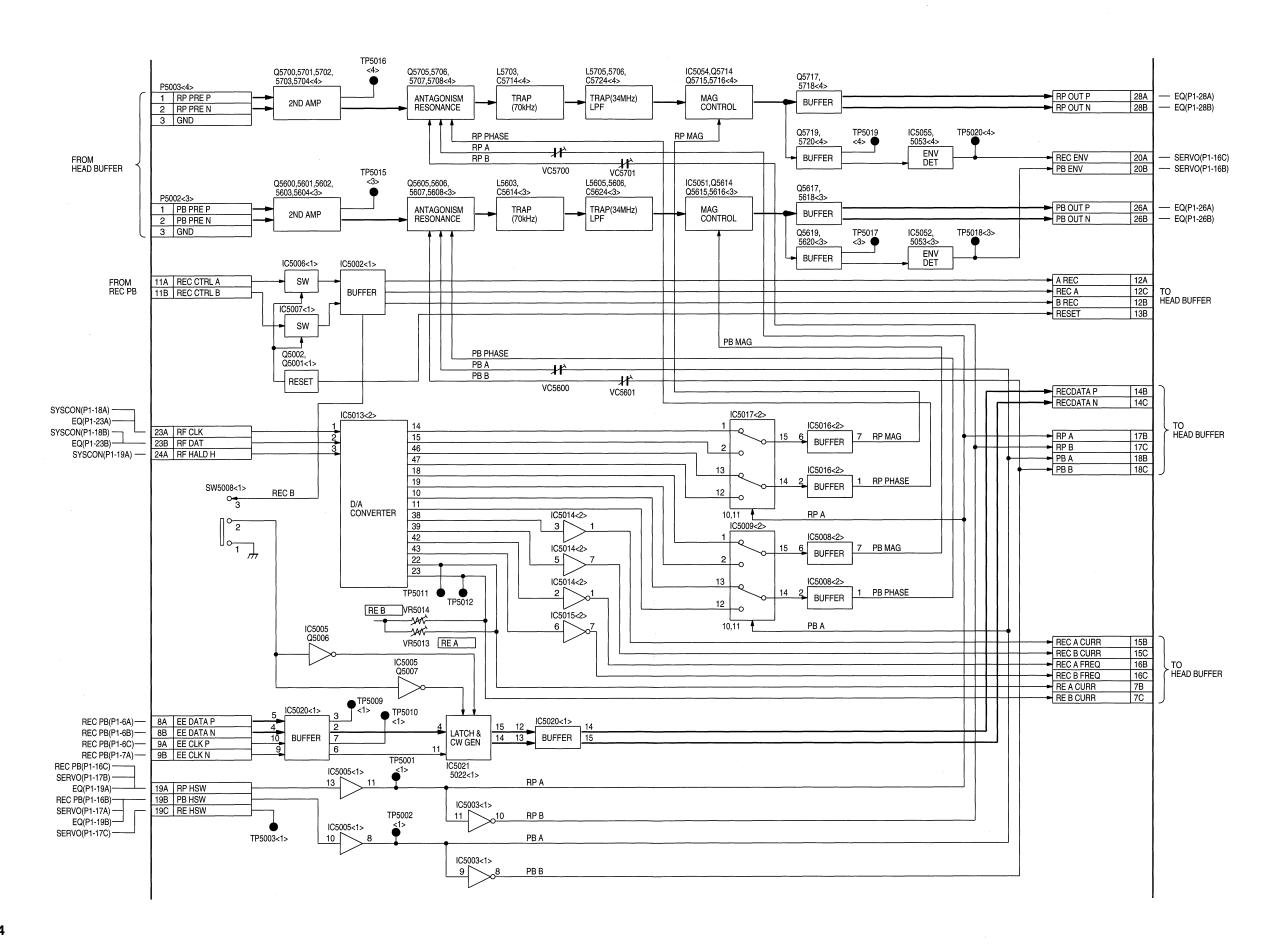
# F8: ADDA CUE 2/2 BLOCK DIAGRAM



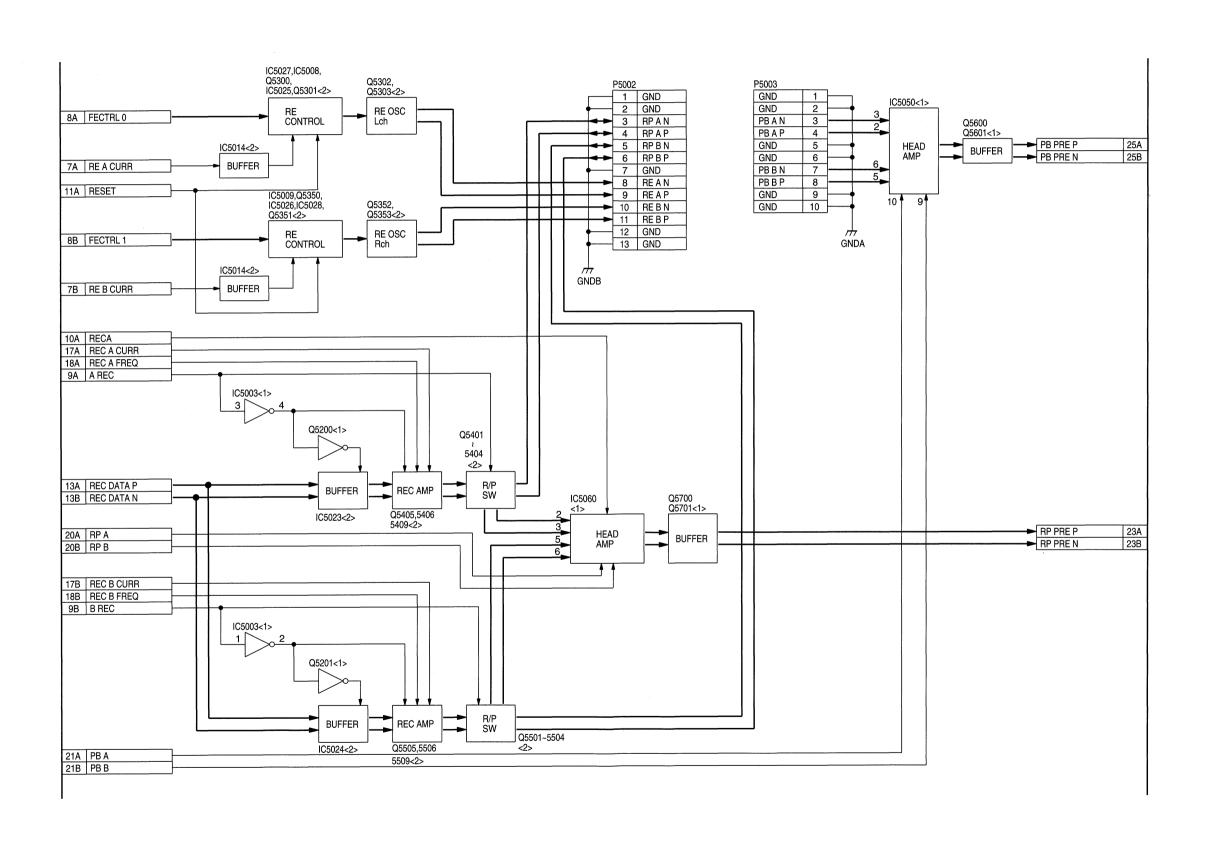
# **H3 EQ BLOCK DIAGRAM**



# **H4 RF AMP BLOCK DIAGRAM**



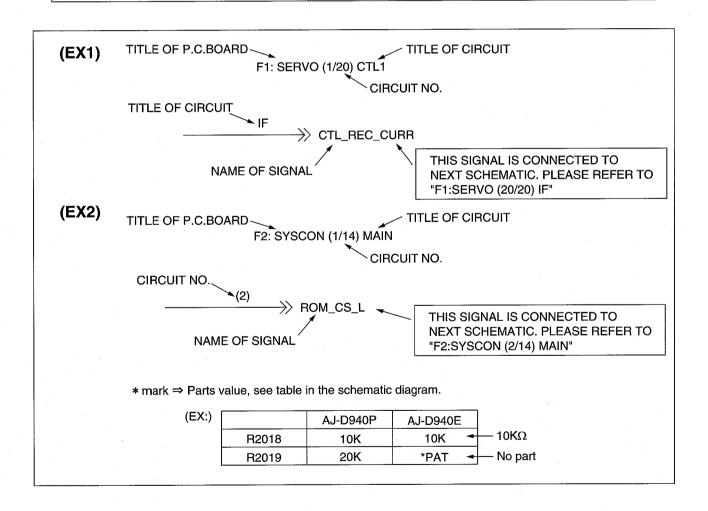
# **HEAD BUFFER BLOCK DIAGRAM**



# **SCHEMATIC DIAGRAMS**

#### Note:

- 1. Do not use the part number shown on the schematic diagram or P.C.Board layout for ordering.
  - The correct part number for ordering is shown in the Exploded Views/Parts List section.
- 2. Unless otherwise specified, all resistors are in OHMS, K=1,000 OHMS, all capacitors are in MICROFARADS ( $\mu F$ ), P= $\mu \mu F$ .



#### NOTE:

DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER SHOWN IN THE PARTS LIST.

AND MAY BE SLIGHTLY DIFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.

CAUTION
THE MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.

### **IMPORTANT SAFETY NOTICE:**

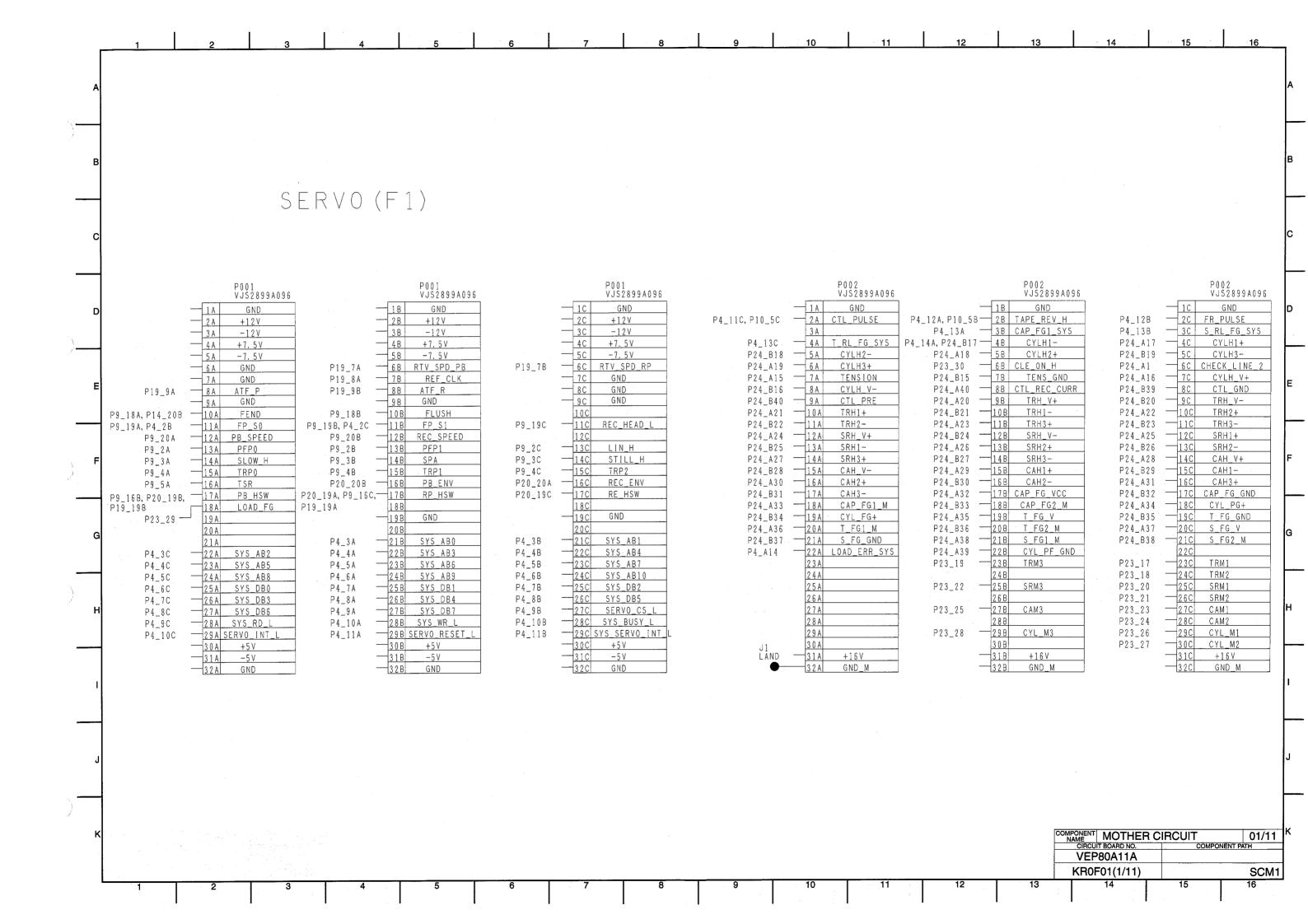
COMPONENTS IDENTIFIED WITH THE MARK  $\triangle$  HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

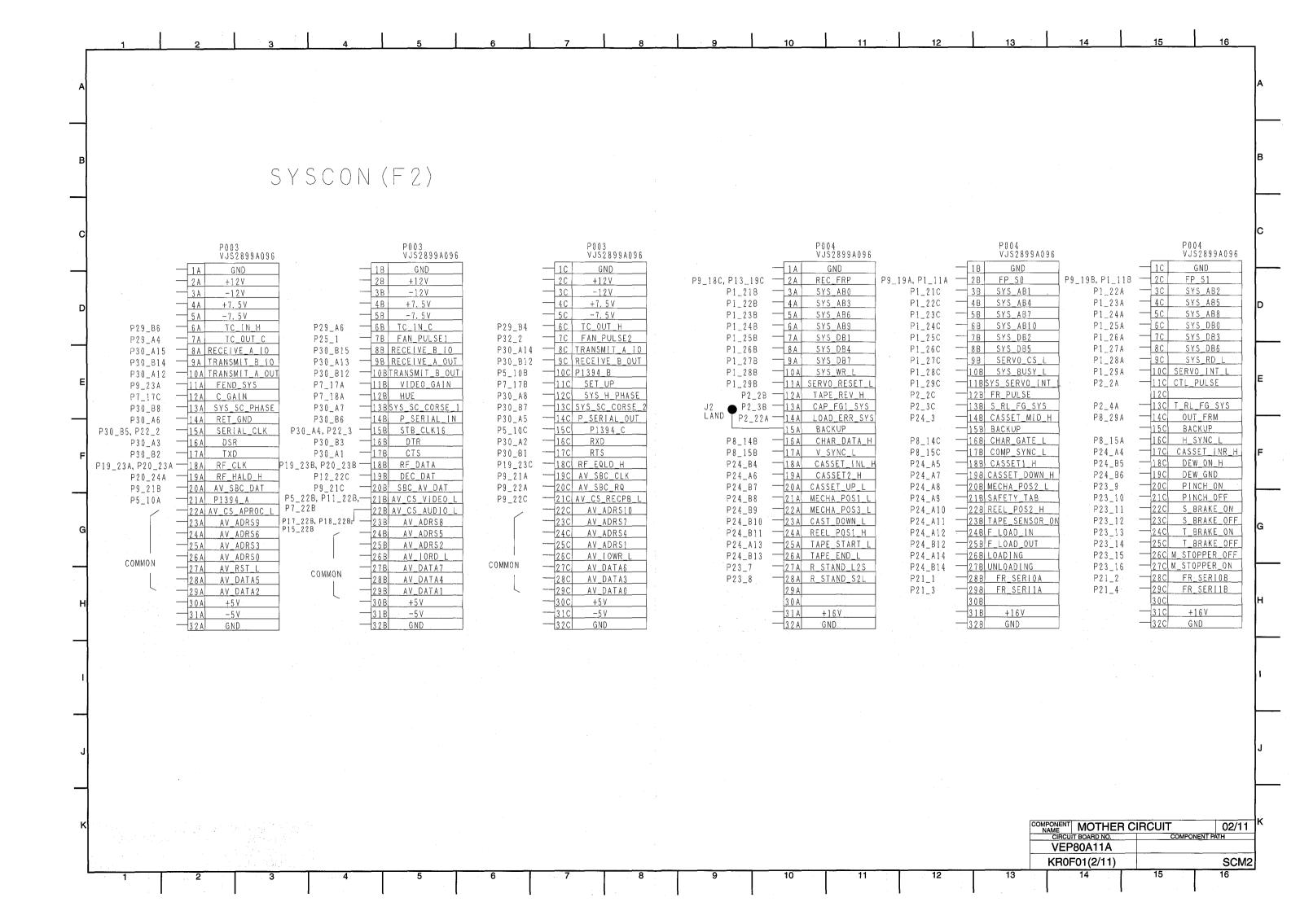
# CONTENTS

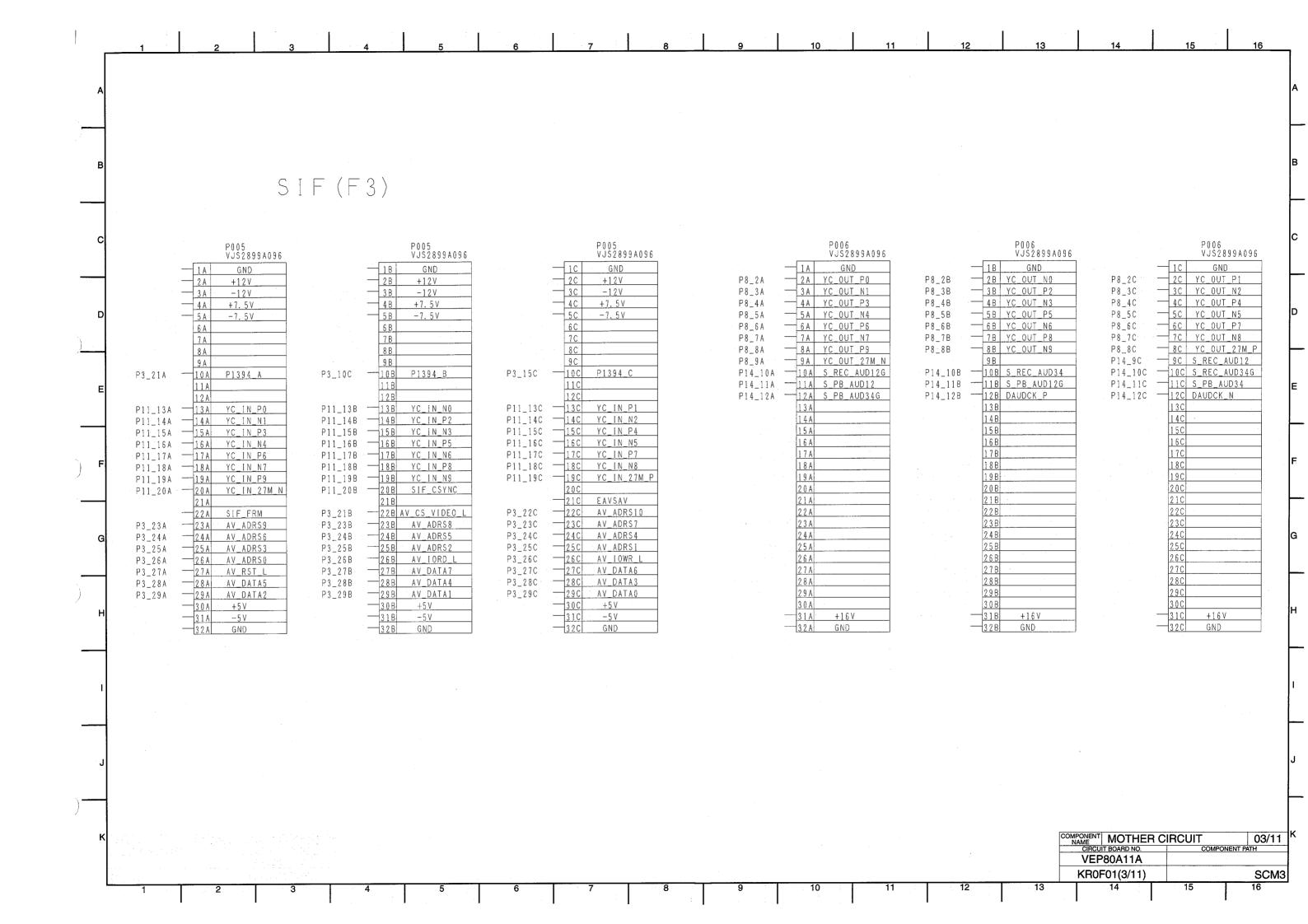
MOTHER (1/11)	SCIVIO I	F4. V_OU1 (4/16) D_BOFF	3010147
MOTHER (2/11)	SCM02	F4: V_OUT (5/16) CMPNENT_DA	SCM48
MOTHER (3/11)	SCM03	F4: V_OUT (6/16) CMPNENT_BUFF	SCM49
MOTHER (4/11)	SCM04	F4: V_OUT (7/16) ANLOG_ENC	SCM50
MOTHER (5/11)	SCM05	F4: V_OUT (8/16) D_OUT_BUFF	SCM51
MOTHER (6/11)	SCM06	F4: V_OUT (9/16) D_ENC	SCM52
MOTHER (7/11)	SCM07	F4: V_OUT (10/16) YC_MIX	SCM53
MOTHER (8/11)	SCM08	F4: V_OUT (11/16) COMPSITE_BUFF	SCM54
MOTHER (9/11)	SCM09	F4: V_OUT (12/16) SYNC_GEN_1	SCM55
MOTHER (10/11)	SCM10	F4: V_OUT (13/16) SYNC_GEN_2	SCM56
MOTHER (11/11)	SCM11	F4: V_OUT (14/16) SYNC_GEN_3	SCM57
F1: SERVO (1/19) CTL 1	SCM12	F4: V_OUT (15/16) SYNC_GEN_4	SCM58
F1: SERVO (2/19) CTL 2	SCM13	F4: V_OUT (16/16) REG	SCM59
F1: SERVO (3/19) CTL 3	SCM14	F5: REC PB (1/23) MPL/BUS_SEL	SCM60
F1: SERVO (4/19) CAP_FG	SCM15	F5: REC PB (2/23) PLL	SCM61
F1: SERVO (5/19) S_FG	SCM16	F5: REC PB (3/23) REC_SHUT	SCM62
F1: SERVO (6/19) T_FG	SCM17	F5: REC PB (4/23) REC_COMP, AUD	SCM63
F1: SERVO (7/19) AD_DA	SCM18	F5: REC PB (5/23) REC_ECC	SCM64
F1: SERVO (8/19) CPU 1	SCM19	F5: REC PB (6/23) REC_DCI	SCM65
F1: SERVO (9/19) CPU 2	SCM20	F5: REC PB (7/23) PB_PCI	SCM66
F1: SERVO (10/19) CPU 3	SCM21	F5: REC PB (8/23) PB_ECC	SCM67
F1: SERVO (11/19) CPU 4	SCM22	F5: REC PB (9/23) PB_AUD, COMP	SCM68
F1: SERVO (12/19) ATF	SCM23	F5: REC PB (10/23) PB_SHUF	SCM69
F1: SERVO (13/19) SW 1		F5: REC PB (11/23) TBC/FILTER	SCM70
F1: SERVO (14/19) SW 2	SCM25	F5: REC PB (12/23) OUT_BUFF2	SCM71
F1: SERVO (15/19) CA CY DRY	SCM26	F5: REC PB (13/23) PAL	SCM72
F1: SERVO (16/19) RL_DRV	SCM27	F5: REC PB (14/23) RECPB_CTRL	SCM73
F1: SERVO (17/19) LM_DRV	SCM28	F5: REC PB (15/23) VIDEO_DATA	SCM74
F1: SERVO (18/19) POWER	SCM29	F5: REC PB (16/23) PIO	SCM75
F1: SERVO (19/19) IF	SCM30	F5: REC PB (17/23) SEC_PB	SCM76
F2: SYSCON (1/13) MAIN		F5: REC PB (18/23) SEC_REC	SCM77
F2: SYSCON (2/13) MAIN	SCM32	F5: REC PB (19/23) SERVO_SEPA	SCM78
F2: SYSCON (3/13) MAIN	SCM33	F5: REC PB (20/23) DVC_RETERN	SCM79
F2: SYSCON (4/13) MAIN	SCM34	F5: REC PB (21/23) DIF	SCM80
F2: SYSCON (5/13) MAIN	SCM35	F5: REC PB (22/23) POWER	SCM81
F2: SYSCON (6/13) I/F	SCM36	F5: REC PB (23/23) MOTHER	SCM82
F2: SYSCON (7/13) I/F	SCM37	450 (NTSC) ONLY	
F2: SYSCON (8/13) I/F	SCM38	F6: V_IN (1/20) CONNECTOR	SCM83
F2: SYSCON (9/13) I/F	SCM39	F6: V IN (2/20) POWER	
F2: SYSCON (10/13) AV_I/F	SCM40	F6: V_IN (3/20) INBUFF	
F2: SYSCON (11/13) AV_I/F	SCM41	F6: V_IN (4/20) SYS_IF	
F2: SYSCON (12/13) AV_I/F	SCM42	F6: V_IN (5/20) SIF_DEC	
F2: SYSCON (13/13)	SCM43	F6: V_IN (6/20) GAIN_CNTRL	
F4: V_OUT (1/16) CONNECTOR	SCM44	F6: V_IN (7/20) 1ST_AD	
F4: V_OUT (2/16) SYS_IF	SCM45	F6: V_IN (8/20) DECODER	
F4: V_OUT (3/16) D_IN_BUFF	SCM46	F6: V_IN (9/20) 4FSC_PLL	

F6: V_IN(10/20) C_DEM	SCM92	F8: A_ADDA (4/12)	SCM139
F6: V_IN (11/20) SYNC_SEP	SCM93	F8: A_ADDA (5/12)	SCM140
F6: V_IN (12/20) 135M_PLL	SCM94	F8: A_ADDA (6/12)	SCM141
F6: V_IN (13/20) M2_BACM_SELECT.	SCM95	F8: A_ADDA (7/12)	SCM142
F6: V_IN (14/20) 2ND_AD_Y	SCM96	F8: A_ADDA (8/12)	SCM143
F6: V_IN (15/20) 2ND_AD_PB	SCM97	F8: A_ADDA (9/12)	SCM144
F6: V_IN (16/20) 2ND_AD_PR	SCM98	F8: A_ADDA (10/12)	SCM145
F6: V_IN (17/20) TBC	SCM99	F8: A_ADDA (11/12)	SCM146
F6: V_IN (18/20) OUTBUFF	SCM100	F8: A_ADDA (12/12)	SCM147
F6: V_IN (19/20) SLICER	SCM101	H3: EQ (1/9)	SCM148
F6: V_IN (20/20) DIG_DEC	SCM102	H3: EQ (2/9)	SCM149
450 (PAL) ONLY		H3: EQ (3/9)	SCM150
F6: V_IN (1/20) CONNECTOR	SCM103	H3: EQ (4/9)	
F6: V_IN (2/20) POWER		H3: EQ (5/9)	SCM152
F6: V_IN (3/20) INBUFF		H3: EQ (6/9)	
F6: V_IN (4/20) SYS_IF		H3: EQ (7/9)	
F6: V_IN (5/20) SIF_DEC		H3: EQ (8/9)	SCM155
F6: V_IN (6/20) GAIN_CNTRL		H3: EQ (9/9)	
F6: V_IN (7/20) 1ST_AD		H4: RF AMP (1/5)	
F6: V_IN (8/20) DECODER		H4: RF AMP (2/5)	
F6: V_IN(9/20) 4FSC_PLL		H4: RF AMP (3/5)	
F6: V_IN(10/20) C_DEM		H4: RF AMP (4/5)	
F6: V_IN (11/20) SYNC_SEP		H4: RF AMP (5/5)	
F6: V_IN (12/20) 135M_PLL		HEAD BUFFER (1/2)	
F6: V_IN (13/20) M2_BCAM_SELECT.		HEAD BUFFER (2/2)	
F6: V_IN (14/20) 2ND_AD_Y	SCM116	V/S_JACK (1/4)	
F6: V_IN (15/20) 2ND_AD_PB	SCM117	V/S_JACK (2/4)	
F6: V_IN (16/20) 2ND_AD_PR	SCM118	V/S_JACK (3/4)	
F6: V_IN (17/20) TBC	SCM119	V/S_JACK (4/4)	
F6: V_IN (18/20) OUTBUFF	SCM120	POWER_1 (1/1)NTSC	
F6: V_IN (19/20) SLICER	SCM121	POWER_1 (1/1)PAL	
F6: V_IN (20/20) DIG_DEC	SCM122	POWER_2 (1/1)NTSC	
F7: A_PROC (1/13) CONNECTOR	SCM123	POWER_2 (1/2) PAL	
F7: A_PROC (2/13) IO_BUFFER	SCM124	POWER_2 (2/2) PAL	
F7: A_PROC (3/13) AIN_DLY	SCM125	POWER CONNECT (1/1)PAL ONLY	
F7: A_PROC (4/13) AUDIO_CNT	SCM126	MECHA_I/F (1/4)	
F7: A_PROC (5/13) SLOW_CTL	SCM127	MECHA_I/F (2/4)	
F7: A_PROC (6/13) PLL	SCM128	MECHA_I/F (3/4)	
F7: A_PROC (7/13) CLK_BUFFER	SCM129	MECHA_I/F (4/4)	
F7: A_PROC (8/13) SYS_IF	SCM130	CARRIGE (1/1)	
F7: A_PROC (9/13) DIO_CONNECTOR	R SCM131	A_JACK (1/1)	
F7: A_PROC (10/13) DIO		SUB_JACK (1/1)	
F7: A_PROC (11/13) SIO		EJECT (1/1)	
F7: A_PROC (12/13) DIN_DLY		FRONT CPU (1/3) CPU	
F7: A_PROC (13/13) DOUT_DLY		FRONT CPU (2/3) CPU	
F8: A_ADDA (1/12)		FRONT CPU (3/3) CPU	
F8: A_ADDA (2/12)	SCM137	HEAD PHONE (1/1)	30101105

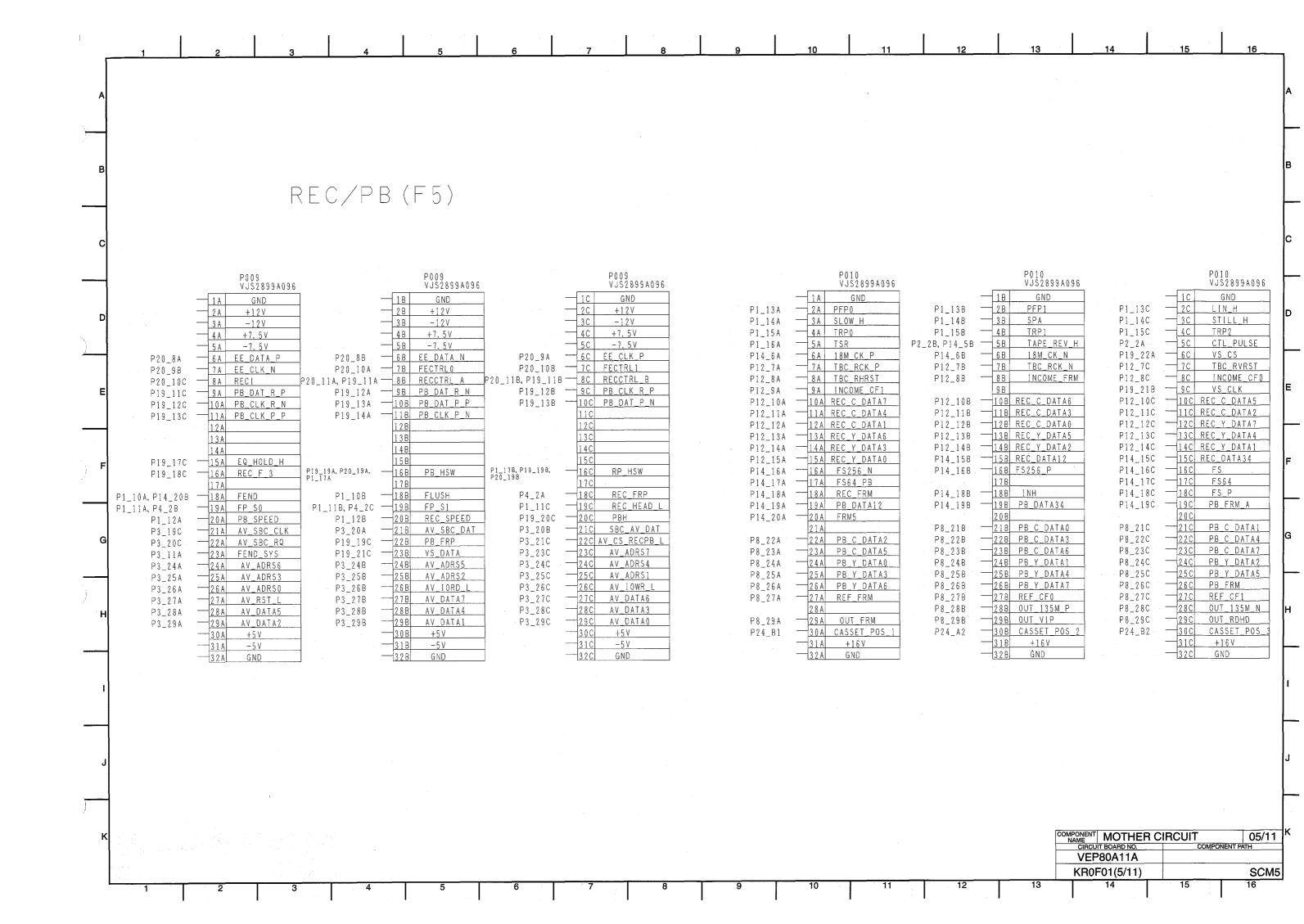
F8: A\_ADDA (3/12).....SCM138

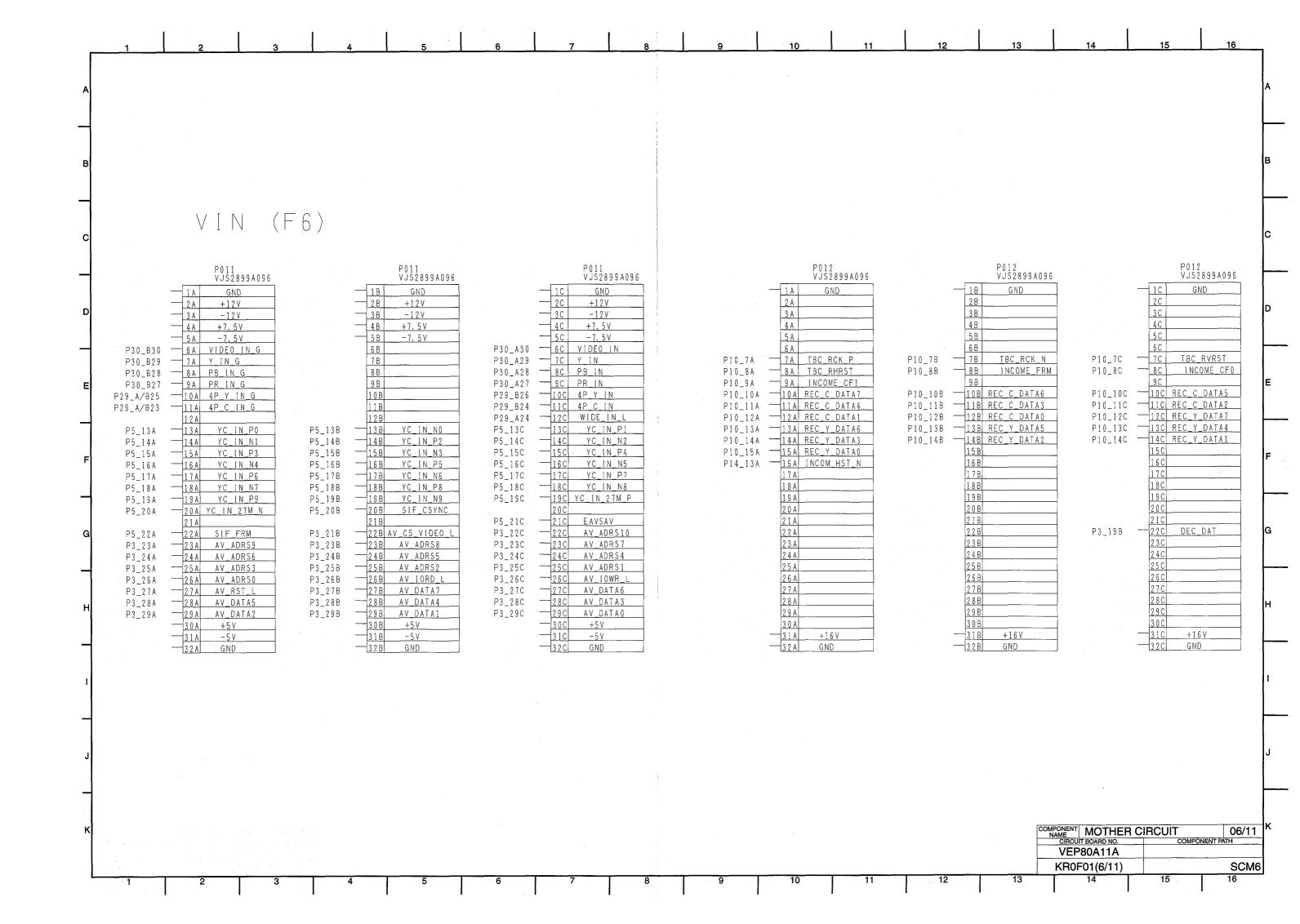


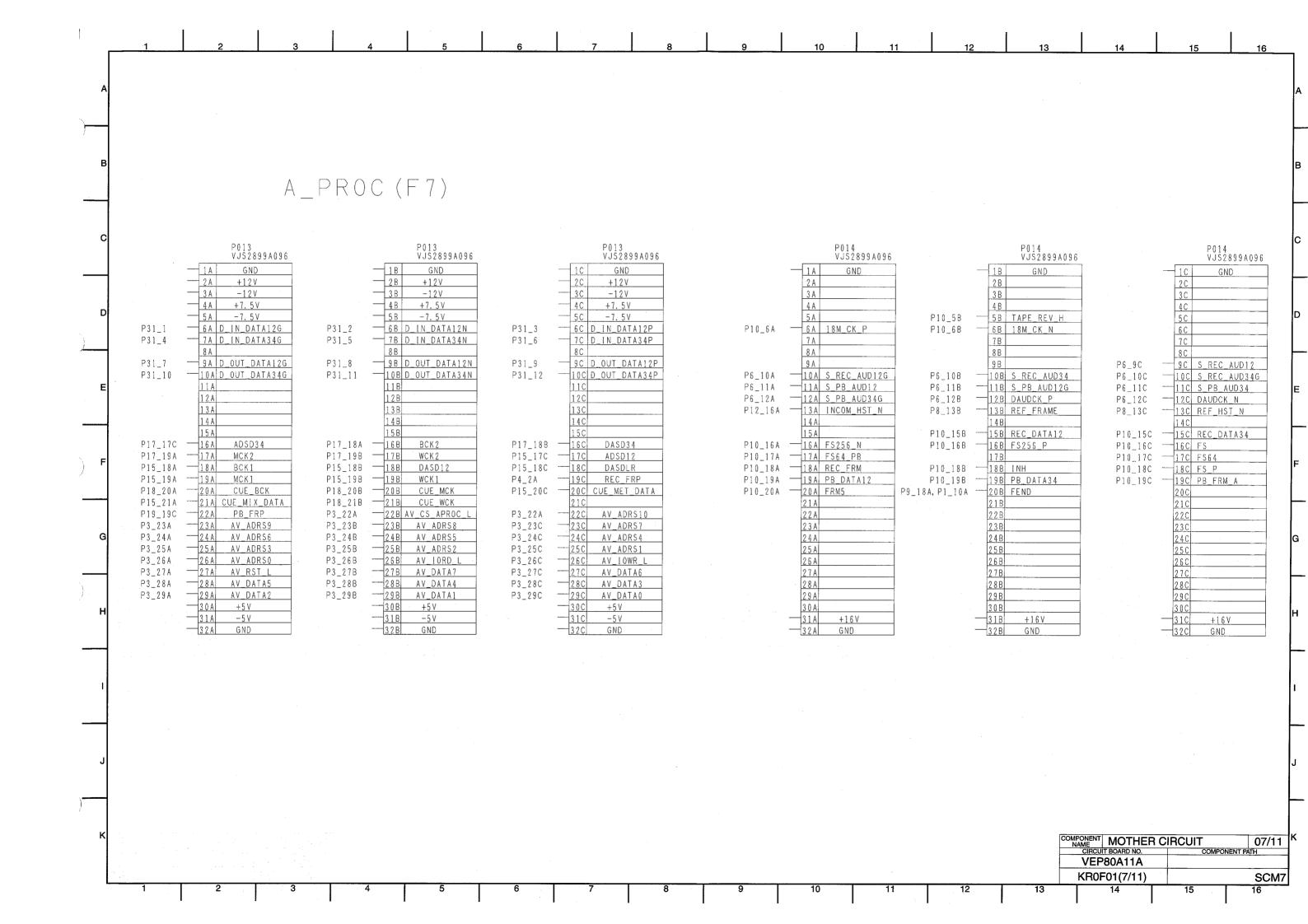




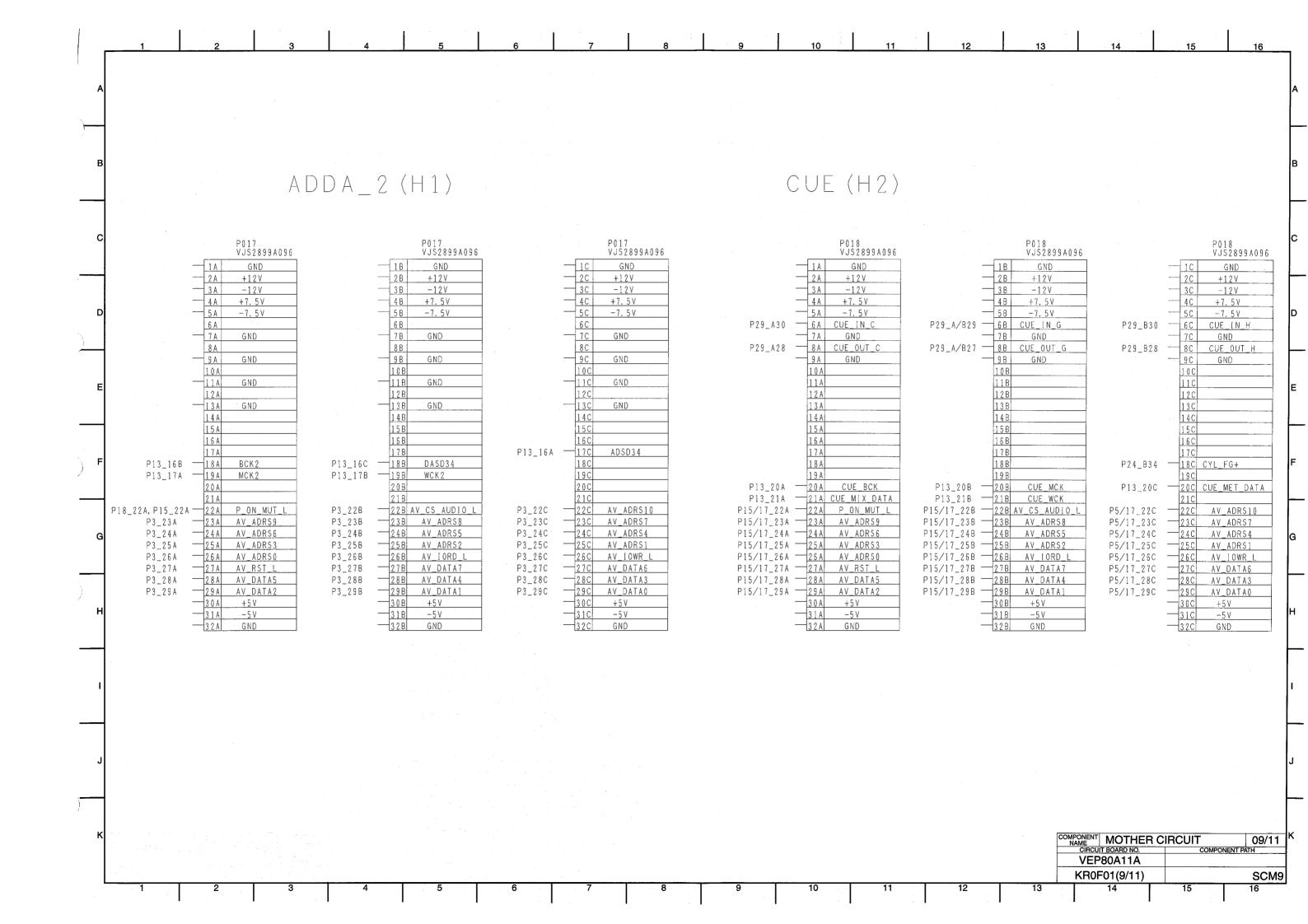
V_OUT (F4)				
P007 VJS2899A096  IA GND 2A +12V 3A -12V 4A +7.5V -5A -7.5V -5A -7.5V -5B -7.5V -6B -7.5V -5B -7	P007 VJS2899A096  1C GND 2C +12V 3C -12V 4C +7.5V 5C -7.5V 5C -7.5V P30_A26 & &C REF_IN 7C P30_A23	P008 VJS2899A096	P008 VJS2899A096	P008 VJS2899A096  ———————————————————————————————————
			CIR VE	NT MOTHER CIRCUIT 0-CUIT BOARD NO. COMPONENT PATH EP80A11A 0F01(4/11) S

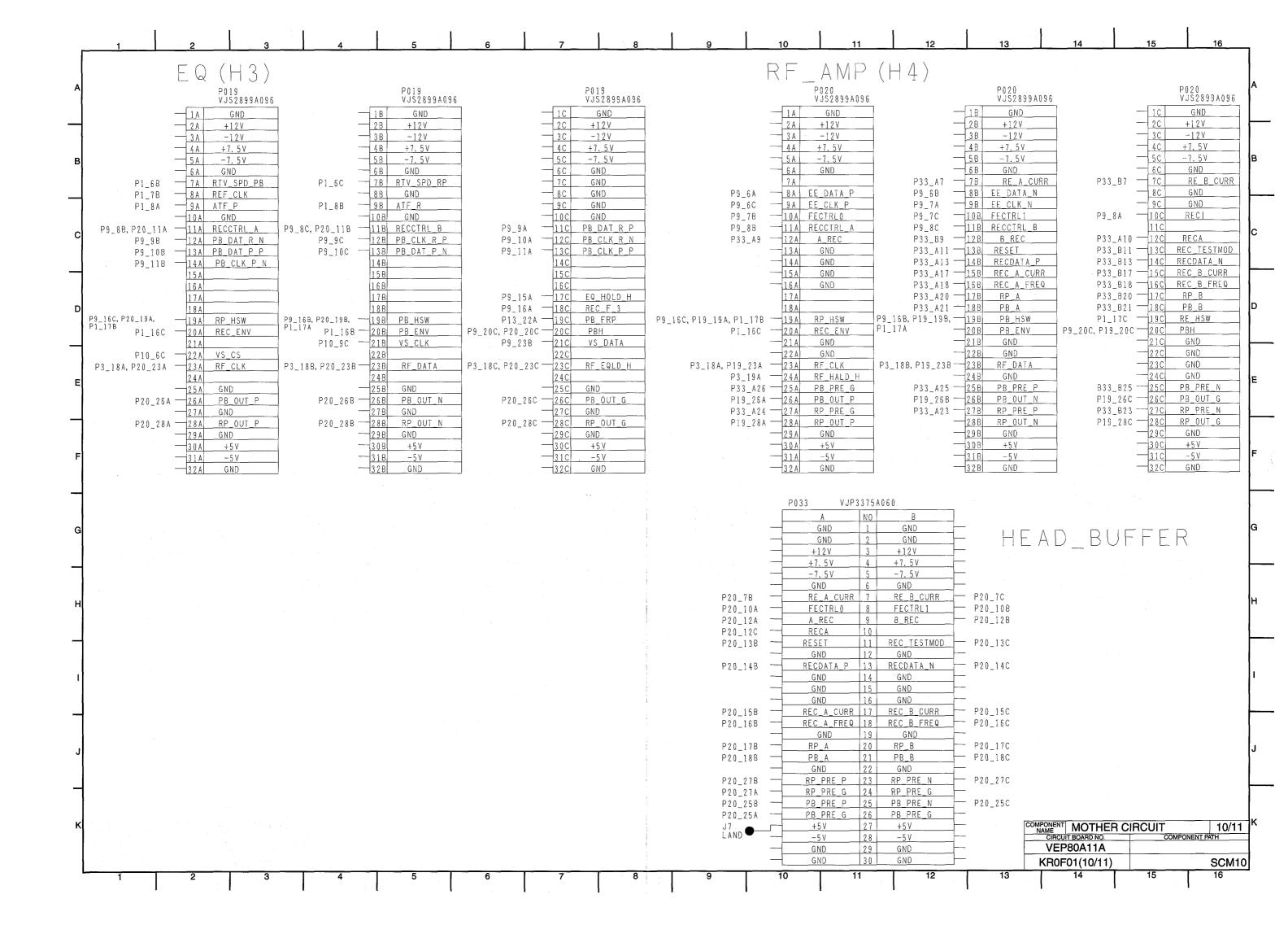


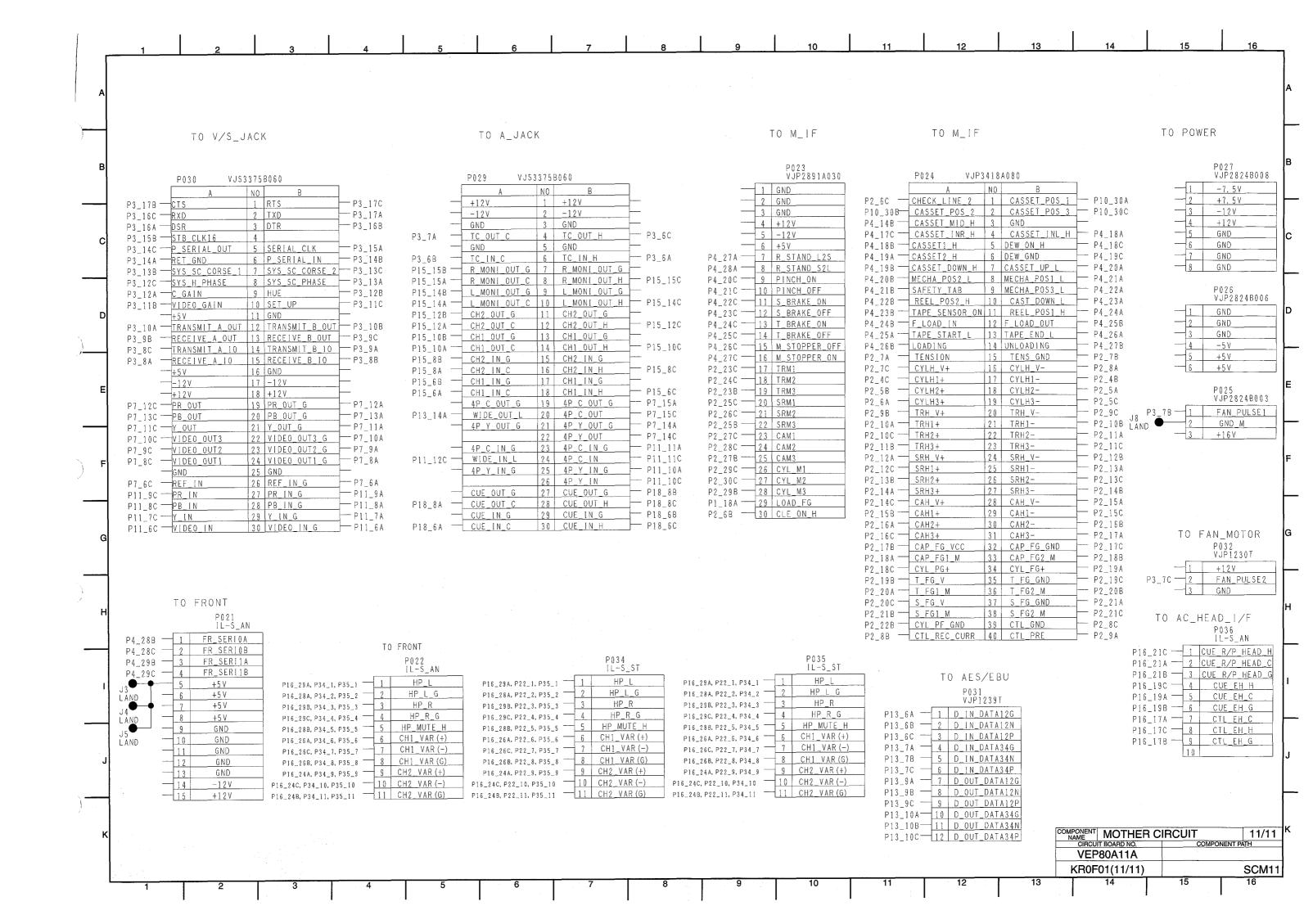


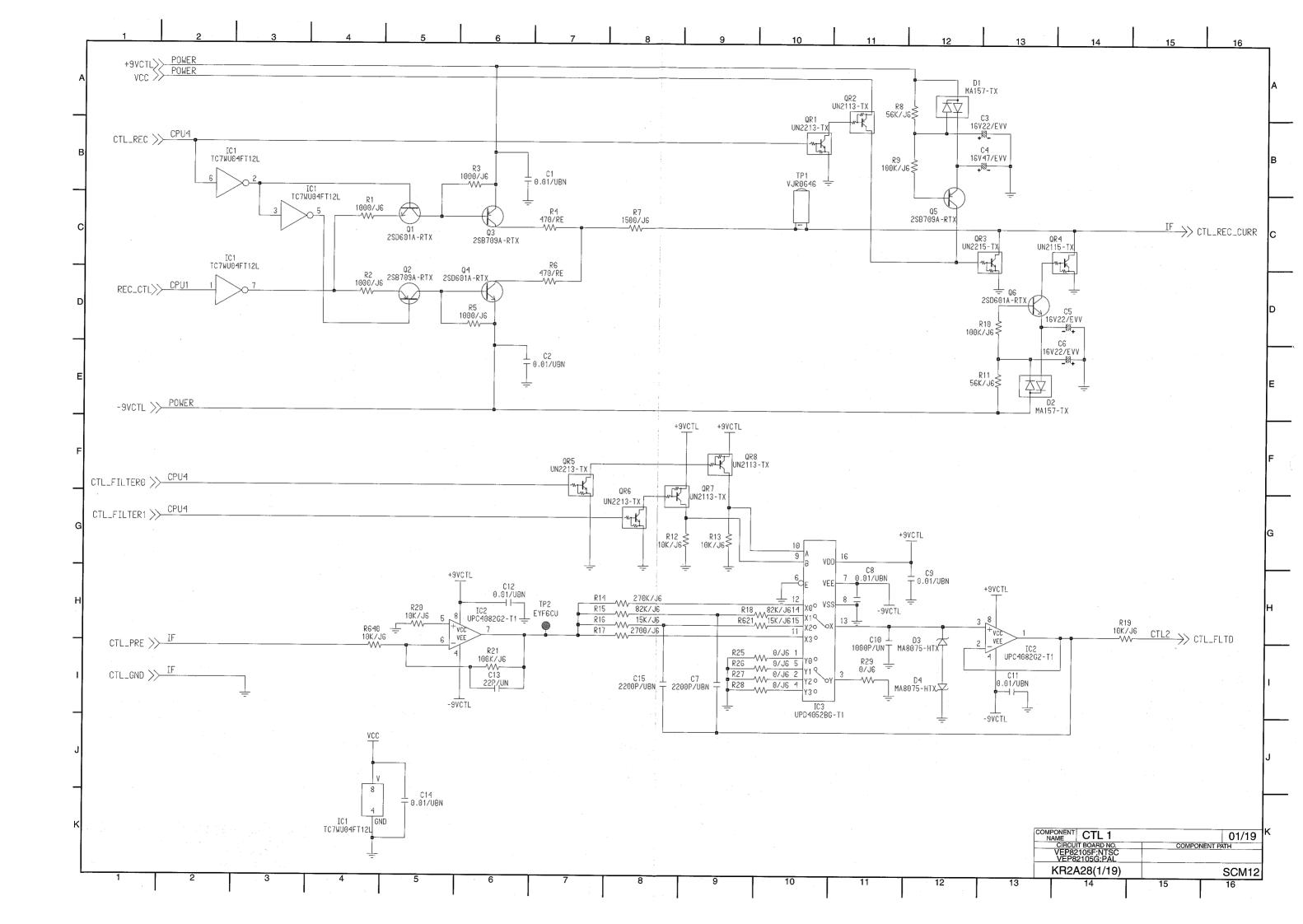


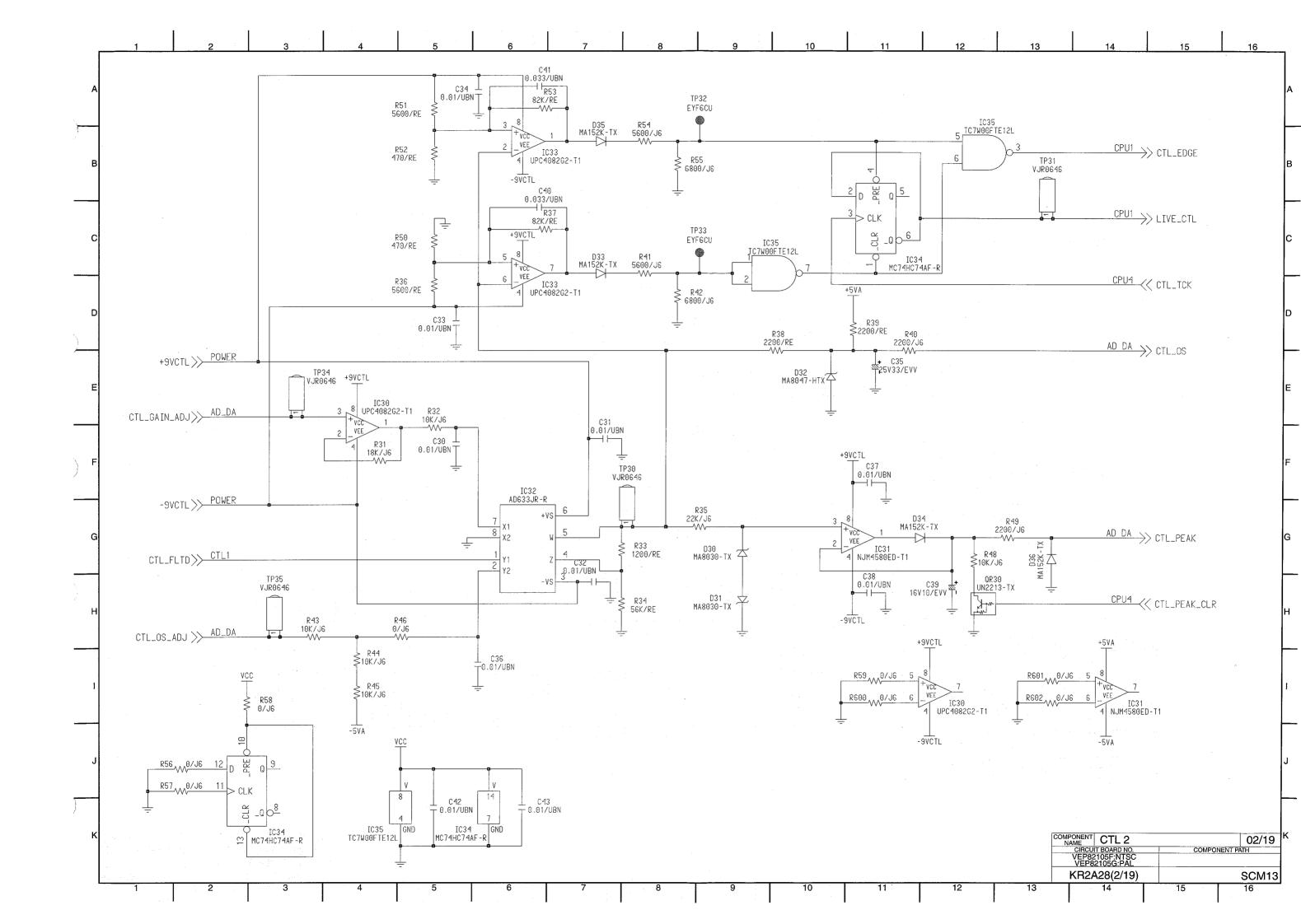
 $ADDA_1 (F8)$ P016 VJS2899A096 P016 VJS2899A096 P016 VJS2899A096 P015 VJS2899A096 P015 VJS2899A096 P015 VJS2899A096 GND GND GND GND GND GND +12V +12V +12V3 A 3 B -12V -12V -12V 4 B +7.5V+7.5V +7.5V 4 A 5 C -7.5V -7.<u>5</u>V -7.5V P29\_A/B17 6B CH1\_IN\_G B29\_B18 - 6C CH1\_IN\_H P29\_A18 -6A CH1\_IN\_C 7 A GND -|7B| GND G N<u>D</u> P29\_A/B15 - 8B CH2\_IN\_G 8 A 8A CH2 IN C B29\_B16 8C CH2\_IN\_H P29\_A16 -9B GND 9 A 9C GND GND B29\_B14 10C CH1\_OUT\_H P29\_A14 10A CH1\_OUT\_C P29\_A/B13 -10B CH1\_OUT\_G <u> 118 GND</u> 11C GND GND 12C CH2\_OUT\_H P29\_A/B11 - 12B CH2\_OUT\_G B29\_B12 P29\_A12 -12A CH2\_OUT\_C GND 13B GND 13B GND 13A 14C 14C L\_MONI\_OUT\_H 14A 14B P29\_A10 — 14A L\_MONI\_OUT\_C P29\_A/B9 - 14B L\_MONI\_OUT\_G B29\_B10 P29\_A/B7 15B R\_MONI\_OUT\_G 15C R\_MONI\_OUT\_H 15B B29\_B8 15A R\_MONI\_OUT\_C P29\_A8 GND GND GND 16C 16C GND 16 A 16A G ND GND P36\_8 CTL\_EH\_H 17B CTL\_EH\_G 17C P36\_9 -P13\_17C 17C ADSD12 P36\_7 17A CTL EH C GND GND P13\_18C — 18C DASDLR GND P13\_18B — 18B DASD12 P13\_18A - 18A BCK1 CUE\_EH\_H CUE EH G P36\_4 P24\_B34 -P36\_5 19 A CUE EH C P13\_19A 19A P13\_198 -19B WCK1 19C CYL FG+ MCK1 GND 200 CUE MET DATA GND P13\_20C -20 A GND 21BCUE\_R/P\_HEAD\_G P36\_2 21A CUE R/P\_HEAD\_C P36\_3 P36\_1 <u> 210 CUE R/P\_HÉAD\_H</u> 21A CUE\_MIX\_DATA P13\_21A -GND -22B AV\_CS\_AUDIO\_L P3\_22C 22C AV\_ADRS10 GND. GND P17\_22A, P18\_22A -22A PON\_MUT\_L P3\_22B GND GND -23A AV\_ADRS9 P3\_23B 23B AV\_ADRS8 P3\_23C 23C AV\_ADRS7 GND P3\_23A 24B CH2\_VAR (G) 24B AV\_ADRS5 24C AV\_ADRS4 P22\_9, P34\_9, P35\_9 24A CH2\_VAR(+) P22\_11, P34\_11, P35\_11 -P22\_10, P34\_10, P35\_10 <u> 240 CH2\_VAR(-)</u> P3\_24C 24A AV\_ADRS6 P3\_24A P3\_24B GND P3\_25B 25B AV\_ADRS2 P3\_25C 25C AV\_ADRS1 25 A GND AV\_ADRS3 25 A P3\_25A 26C CH1 VAR (-) 26B CH1 VAR (G) P22\_7, P34\_7, P35\_7 26A 27A CH1\_VAR(+) P22\_8, P34\_8, P35\_8 -26 A P3\_26A AV\_ADRSO P3\_26B 26B AV\_IORD\_L P3\_26C 26C AV\_IOWR\_I P22\_6, P34\_6, P35\_6 27B 27 A GND GND 27C GND AV\_DATA7 27C AV\_DATA6 P3\_27B P3\_27C P3\_27A AV\_RST\_L - 28B HP\_MUTE\_H 28C AV\_DATA3 P22\_2, P34\_2, P35\_2 ---28A HP\_L\_G P22\_5, P34\_5, P35\_5 — 28A P3\_28B 28B AV\_DATA4 P3\_28C P3\_28A AV\_DATA5 HP\_R\_G\_ HP\_R P22\_4, P34\_4, P35\_4 P22\_1, P34\_1, P35\_1 29 A P22\_3, P34\_3, P34\_3 -29B ---{29 A AV DATA2 P3\_29B AV\_DATA1 P3\_29C 29C AV\_DATA0 HP\_L P3\_29A -- 29B 30C 3 0 A + <u>5</u> V 30B +5V +5V 31C <u>+16V</u> +16V -5 V 31C -5V 31A <u>-5V</u> 32A GND 32C GND GND GND GND -32C 32A GND 32B CIRCUIT BOARD NO. 08/11 COMPONENT PATH VEP80A11A KR0F01(8/11) SCM8

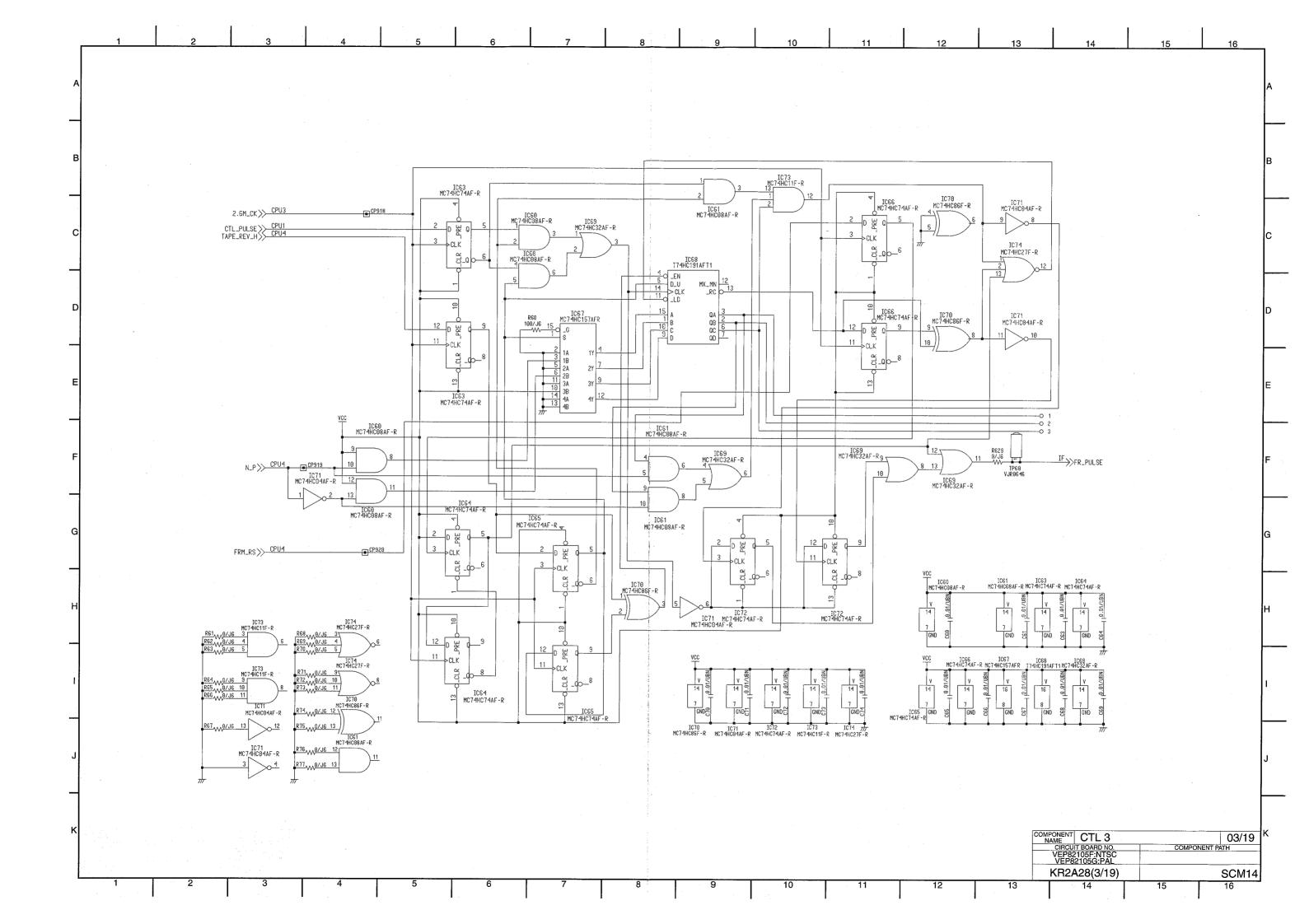


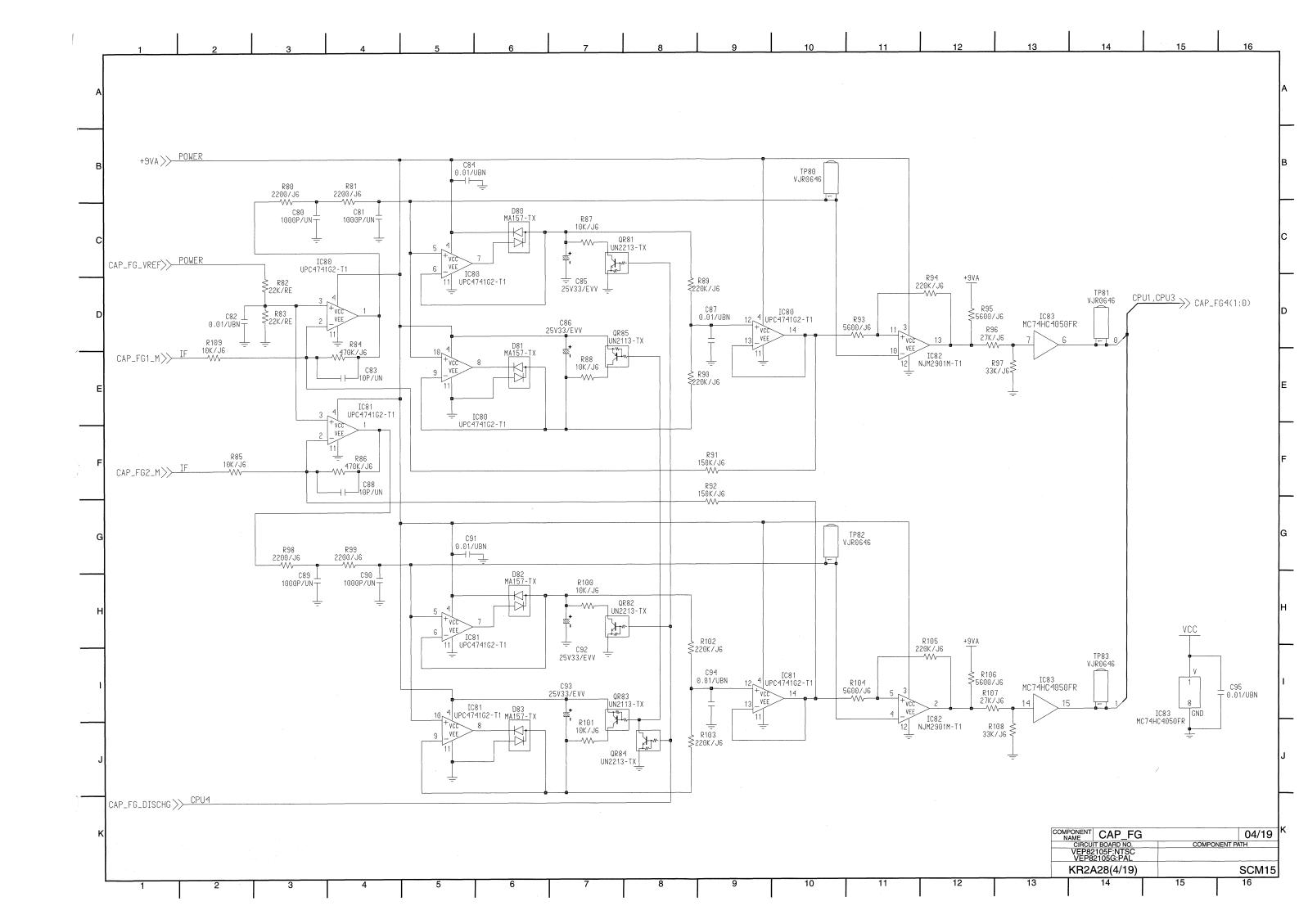


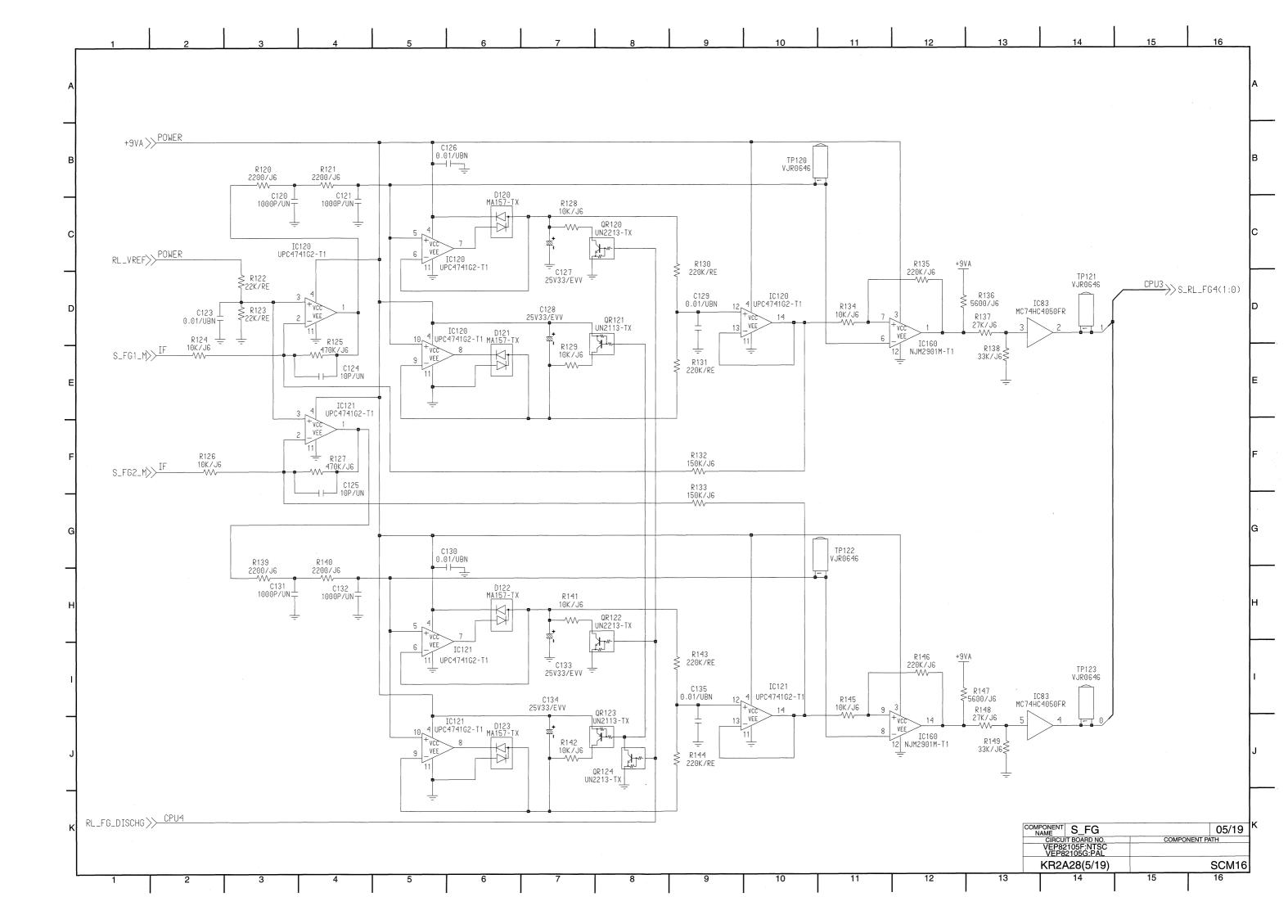


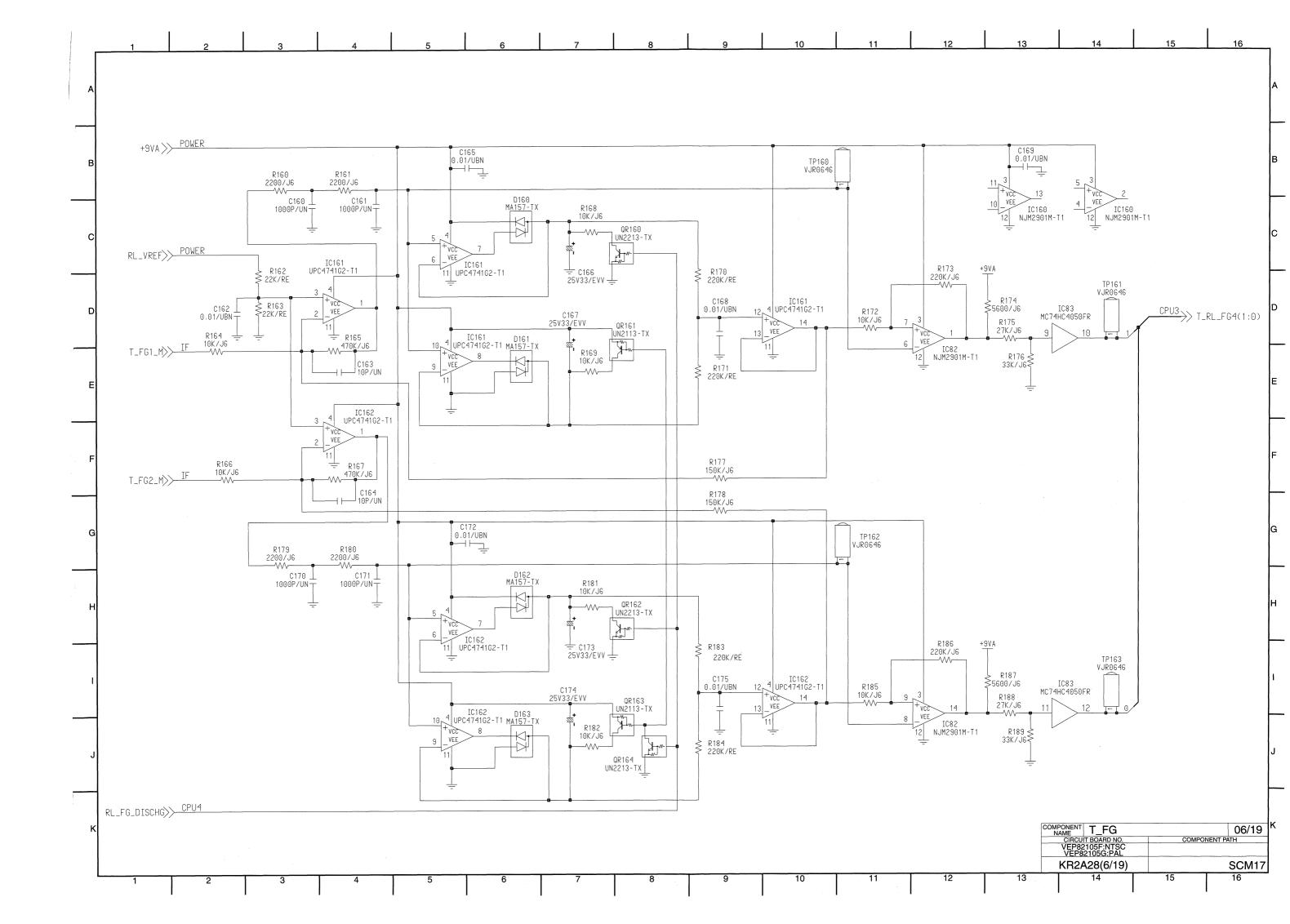


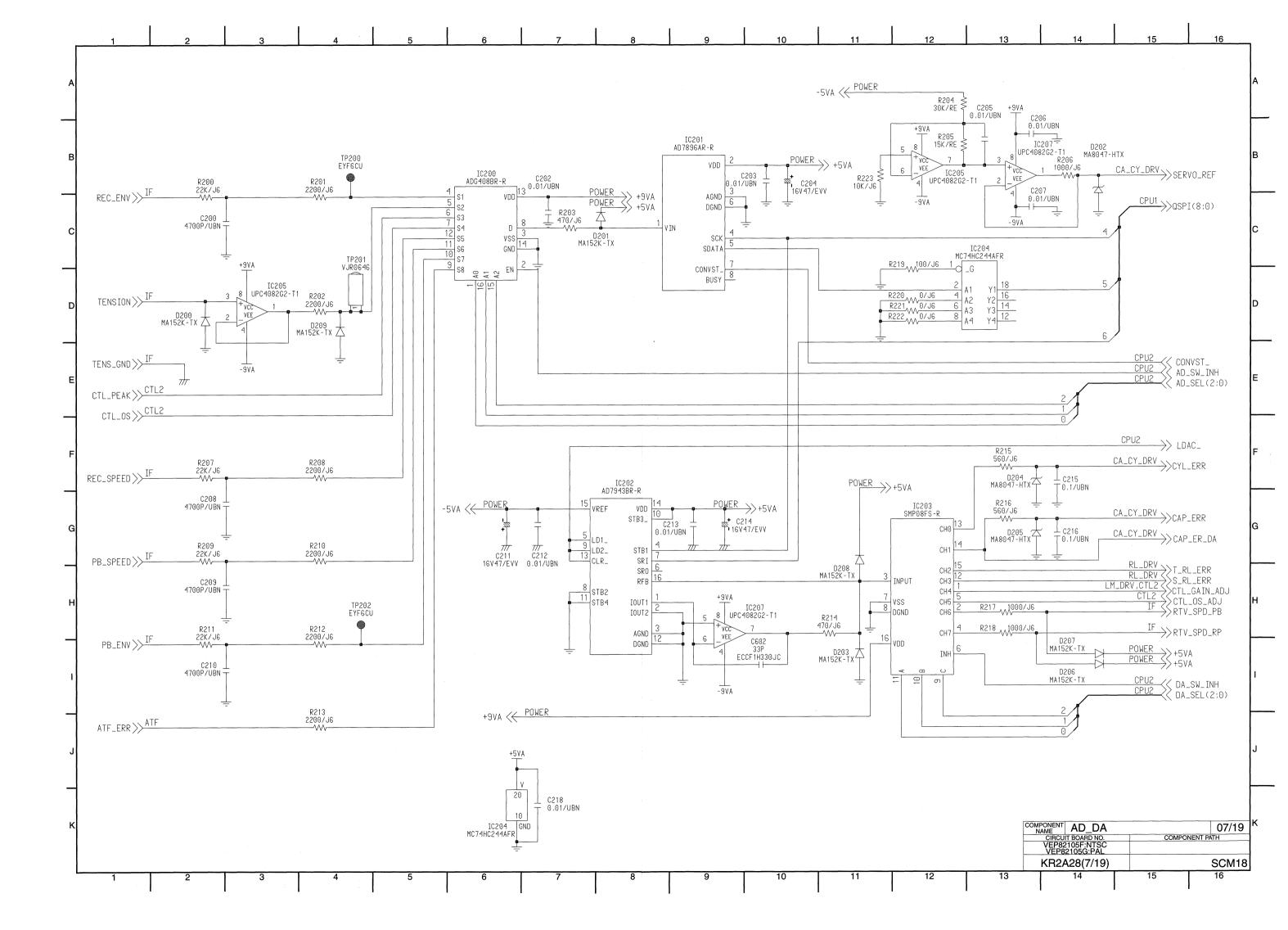


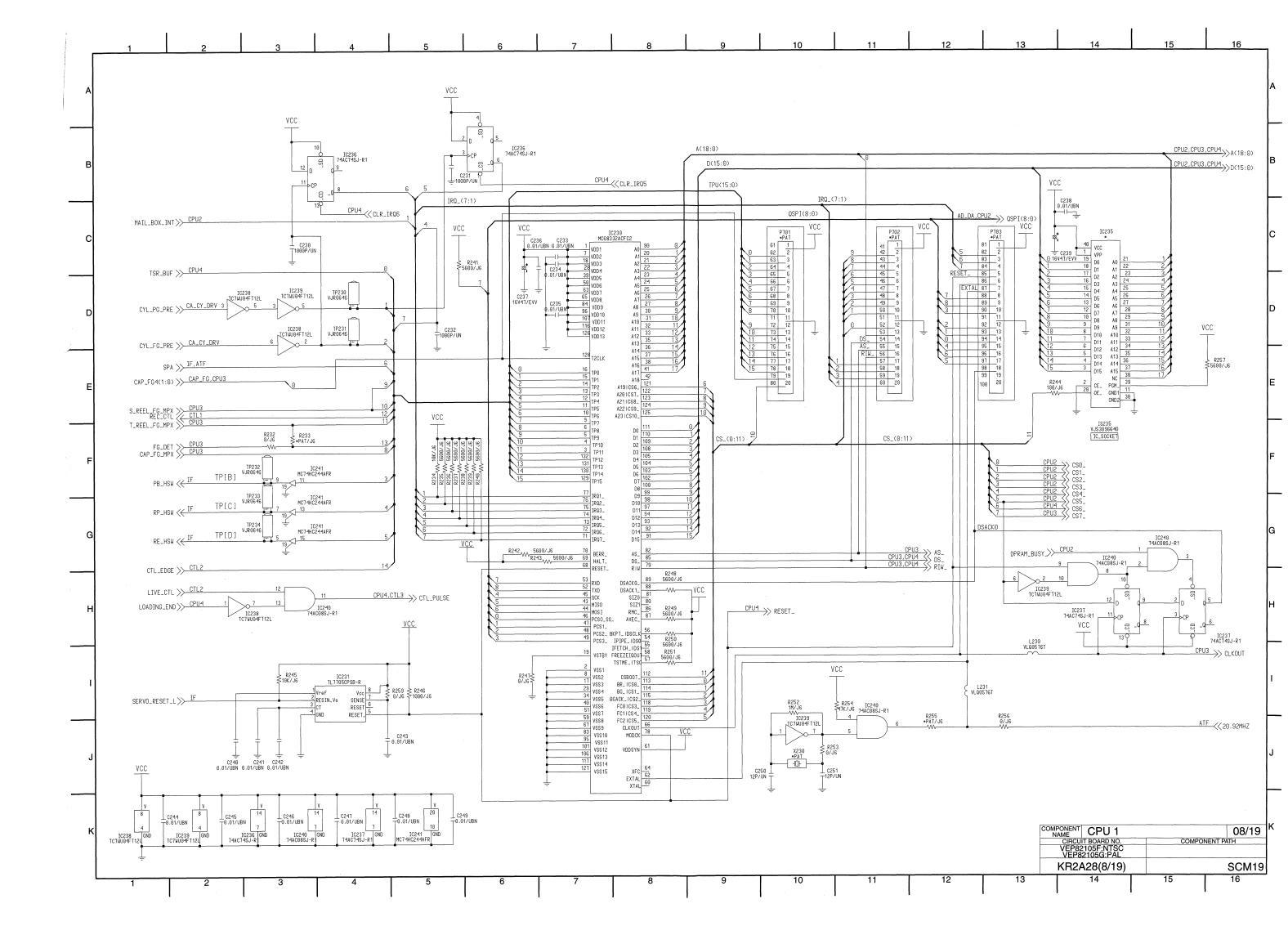


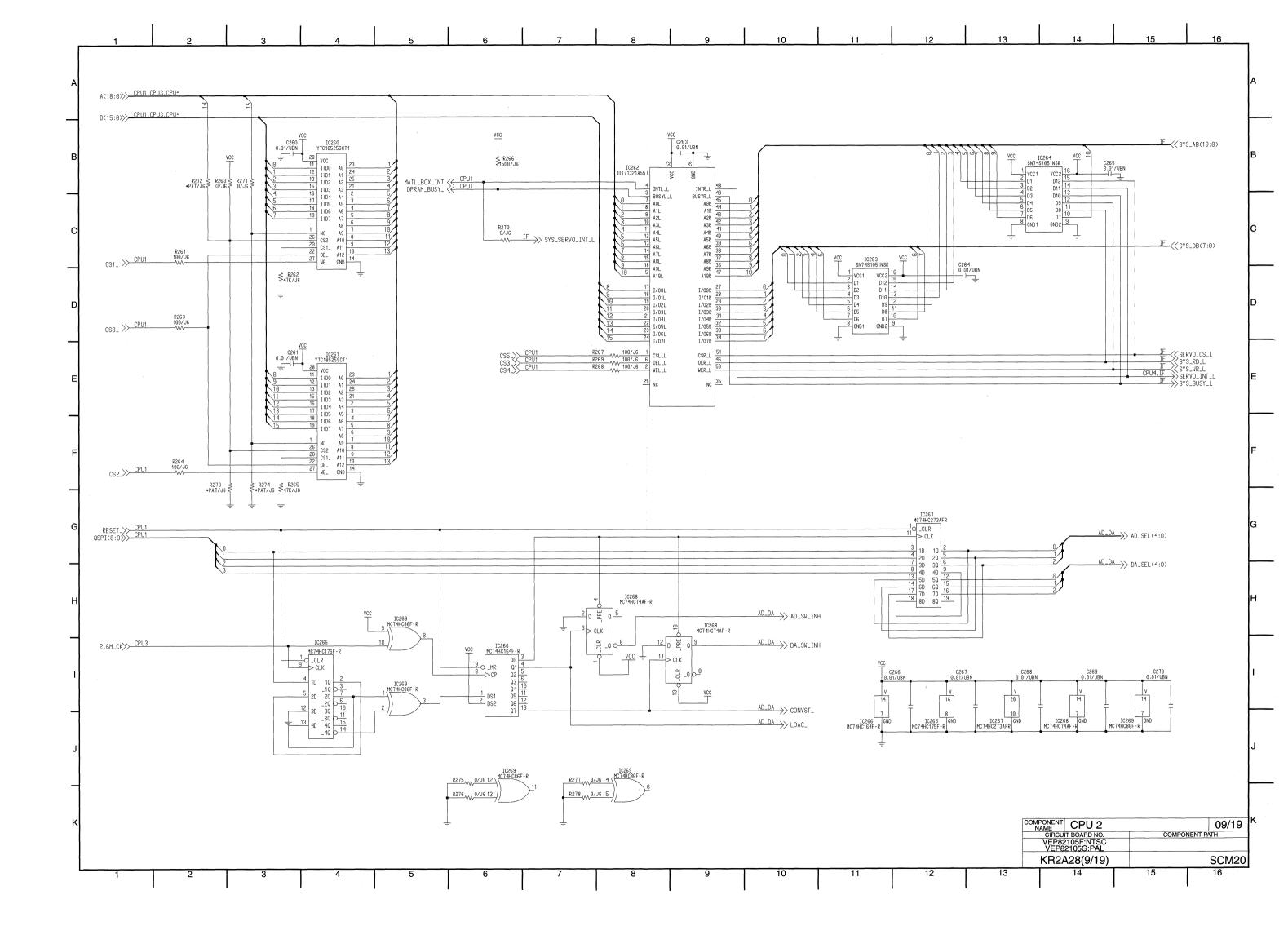


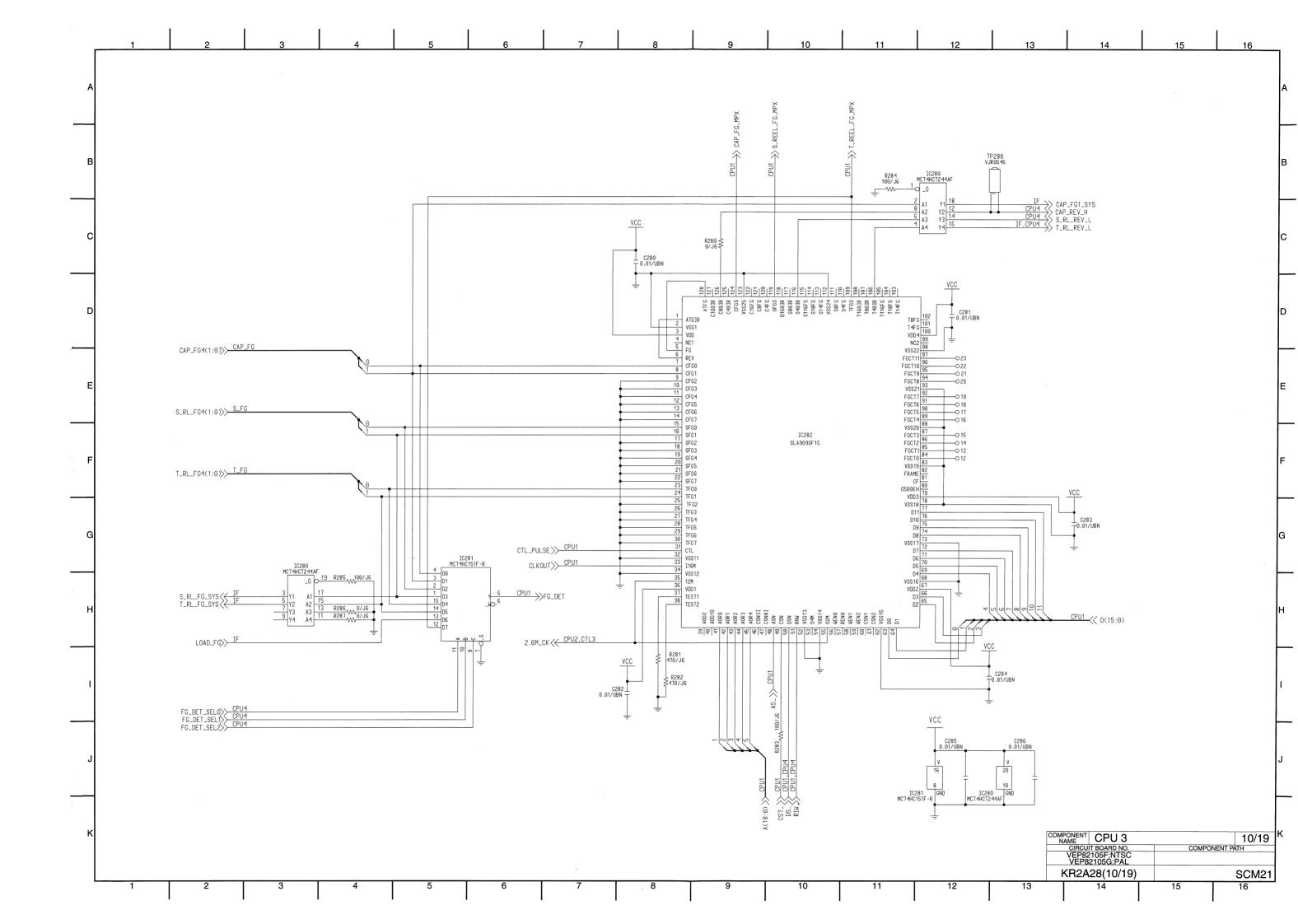


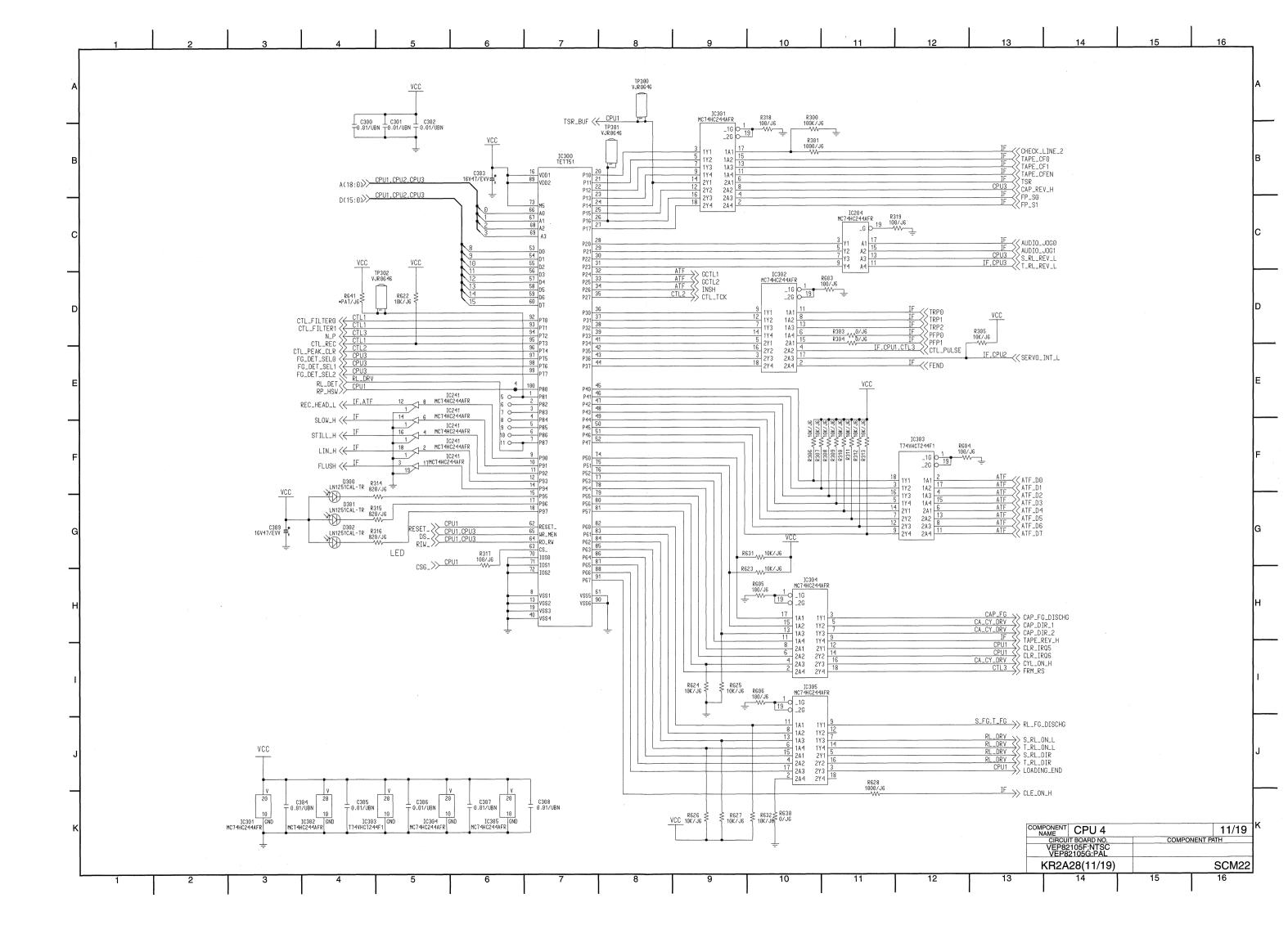


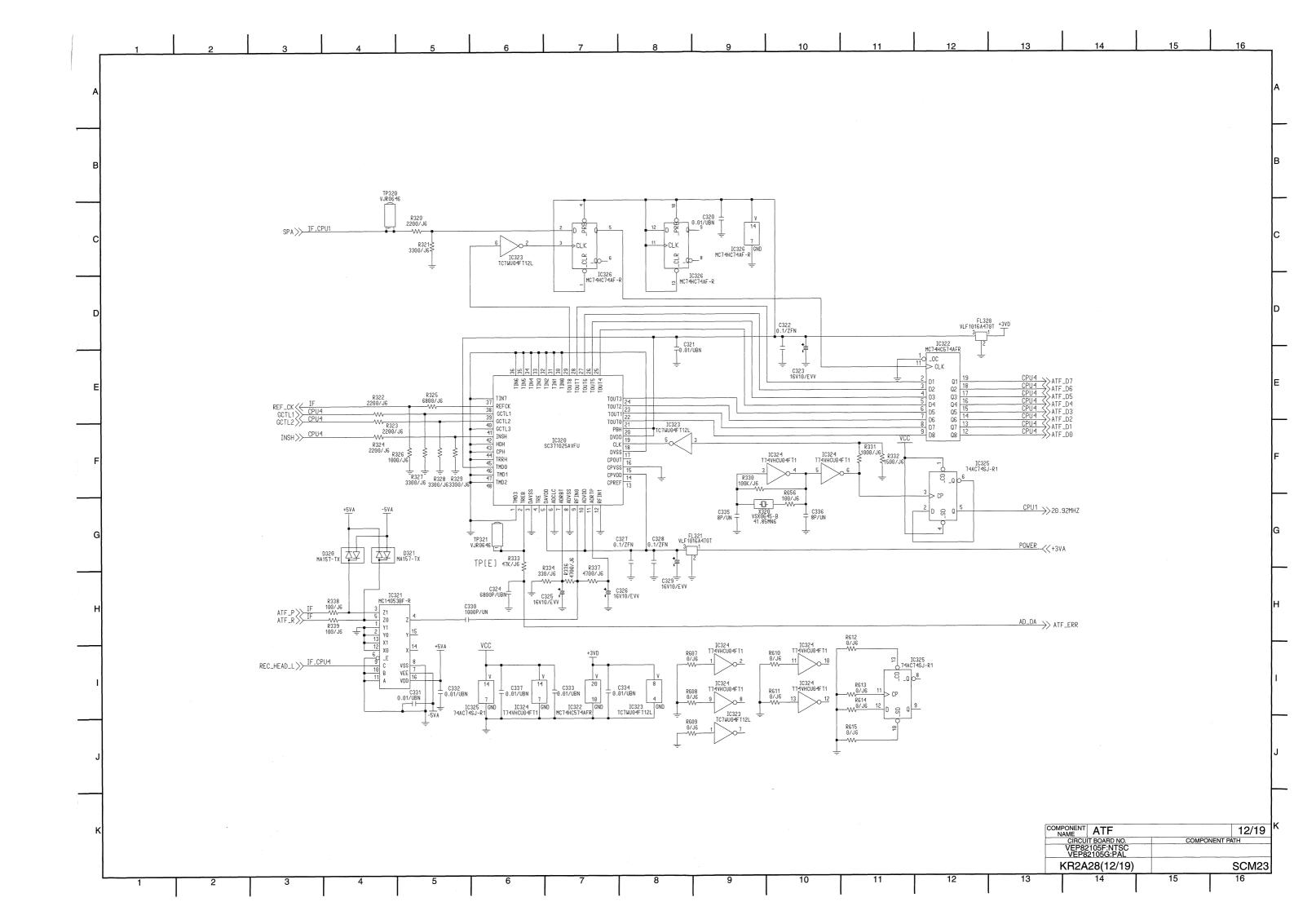


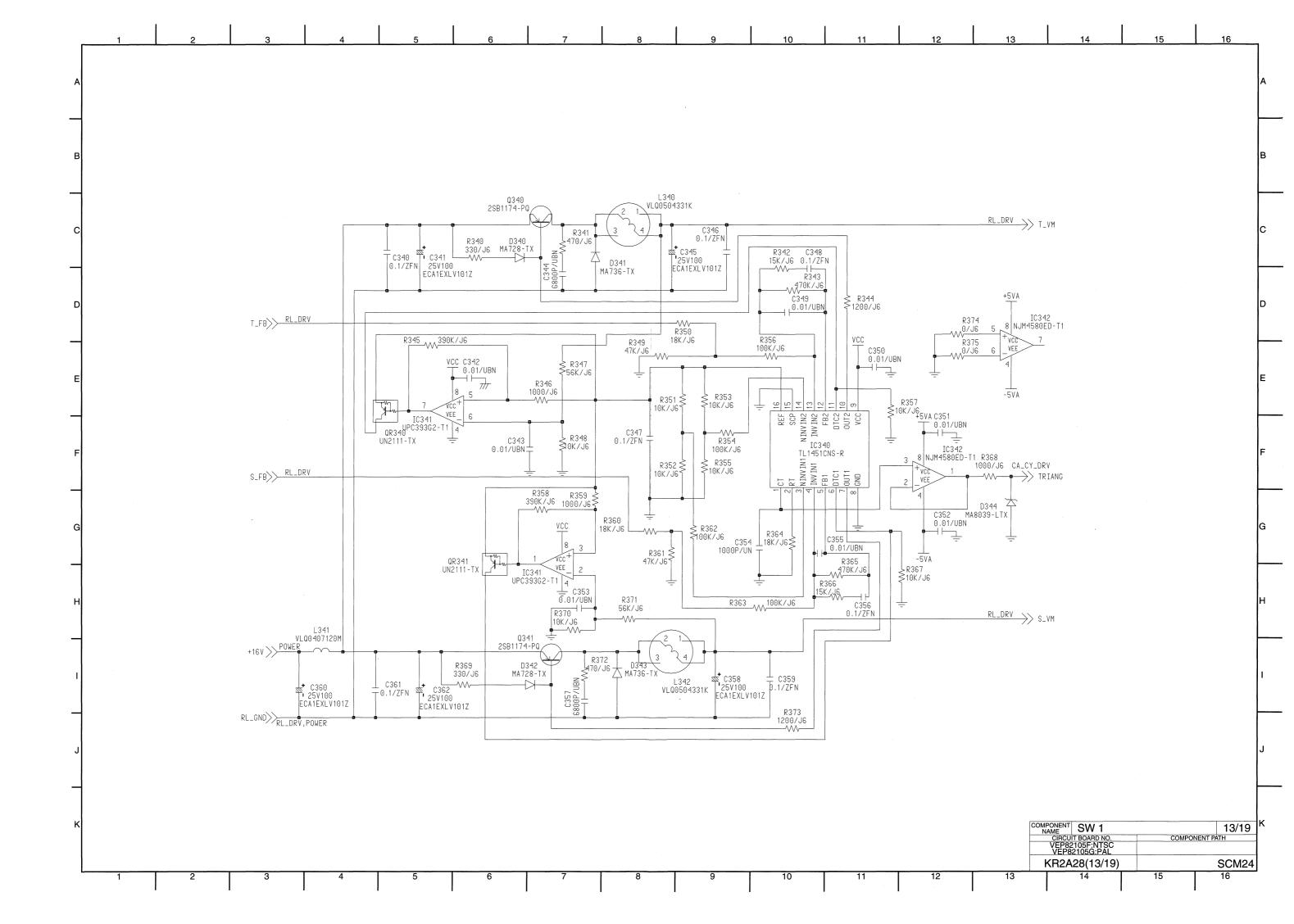


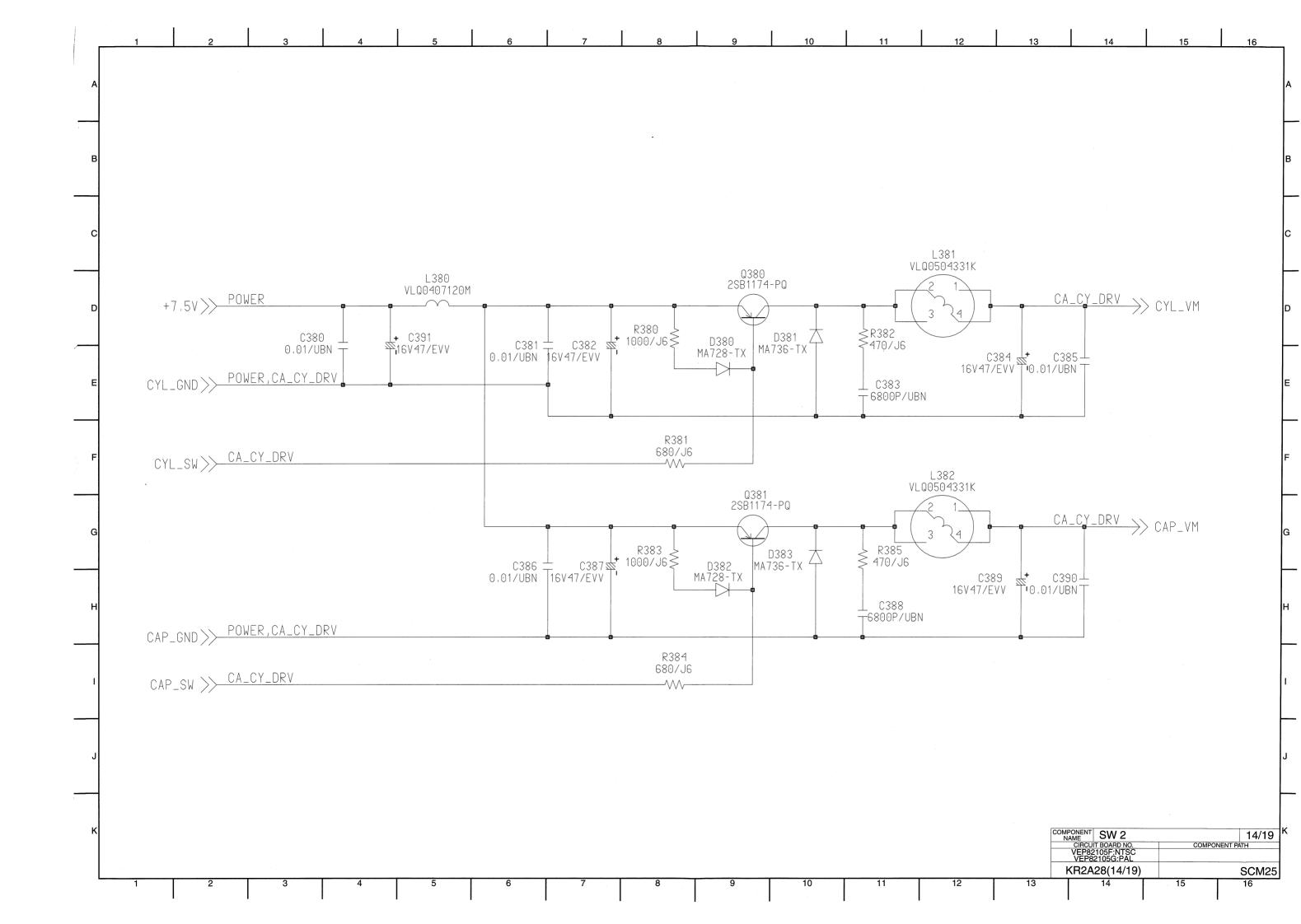


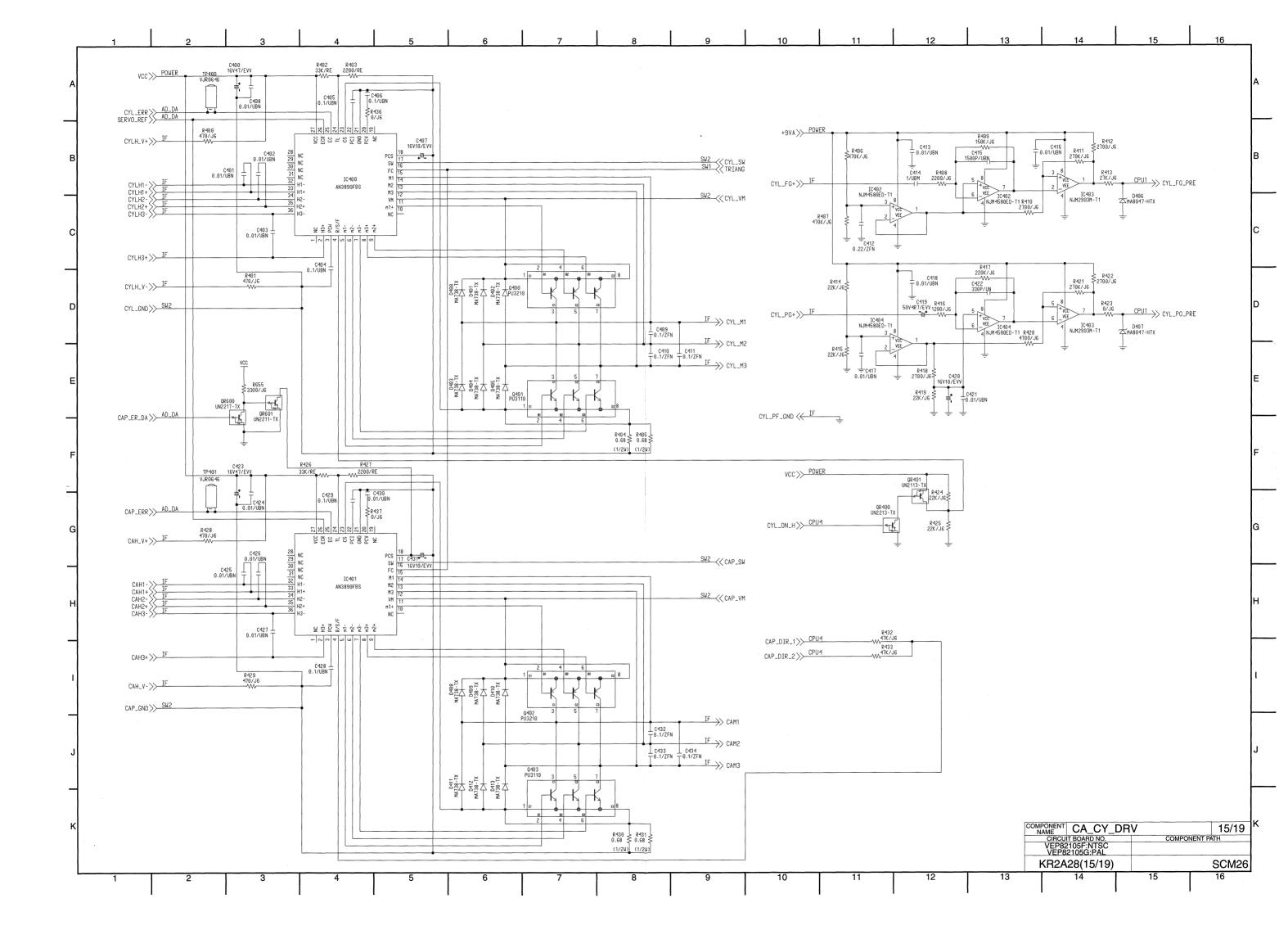


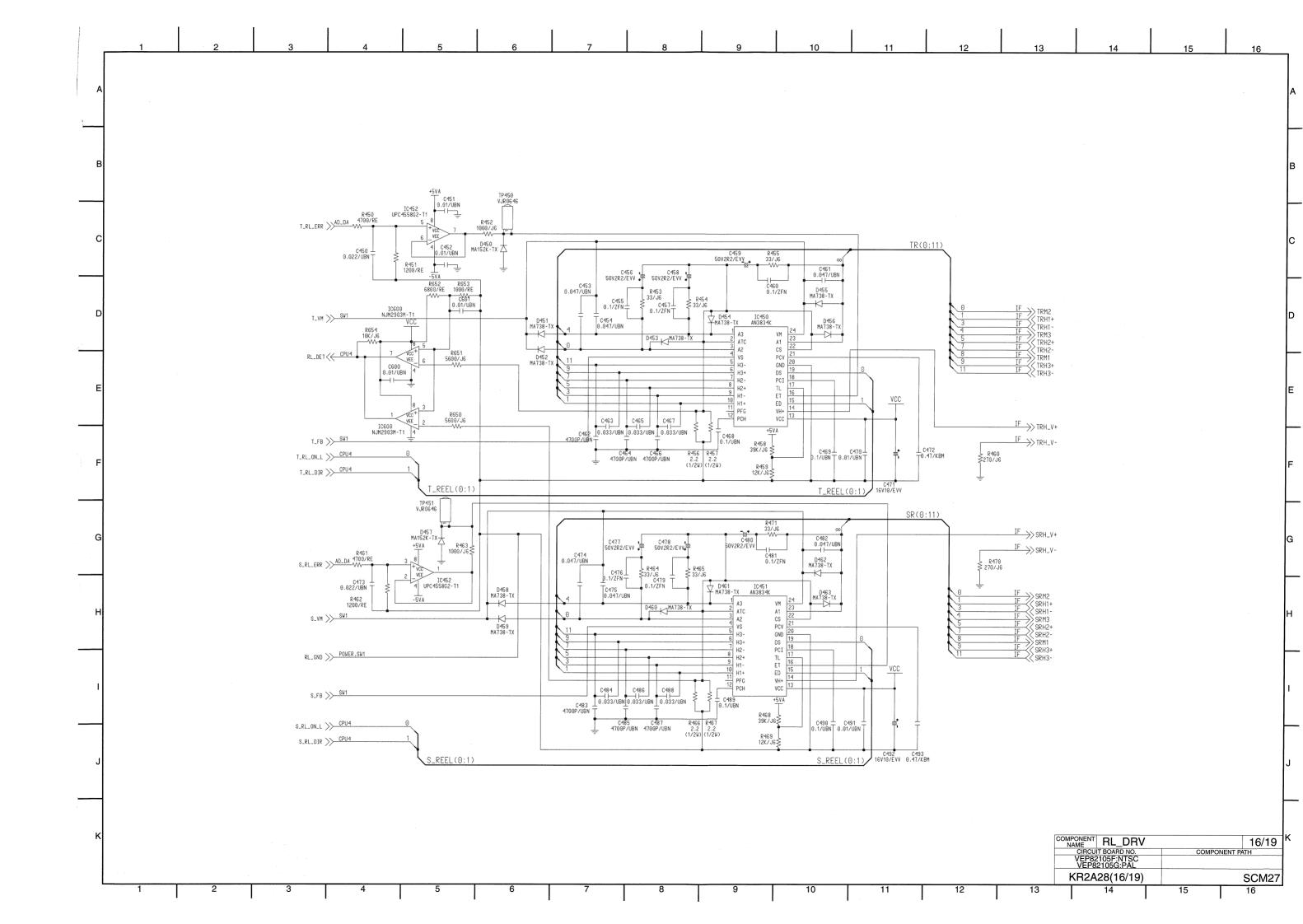


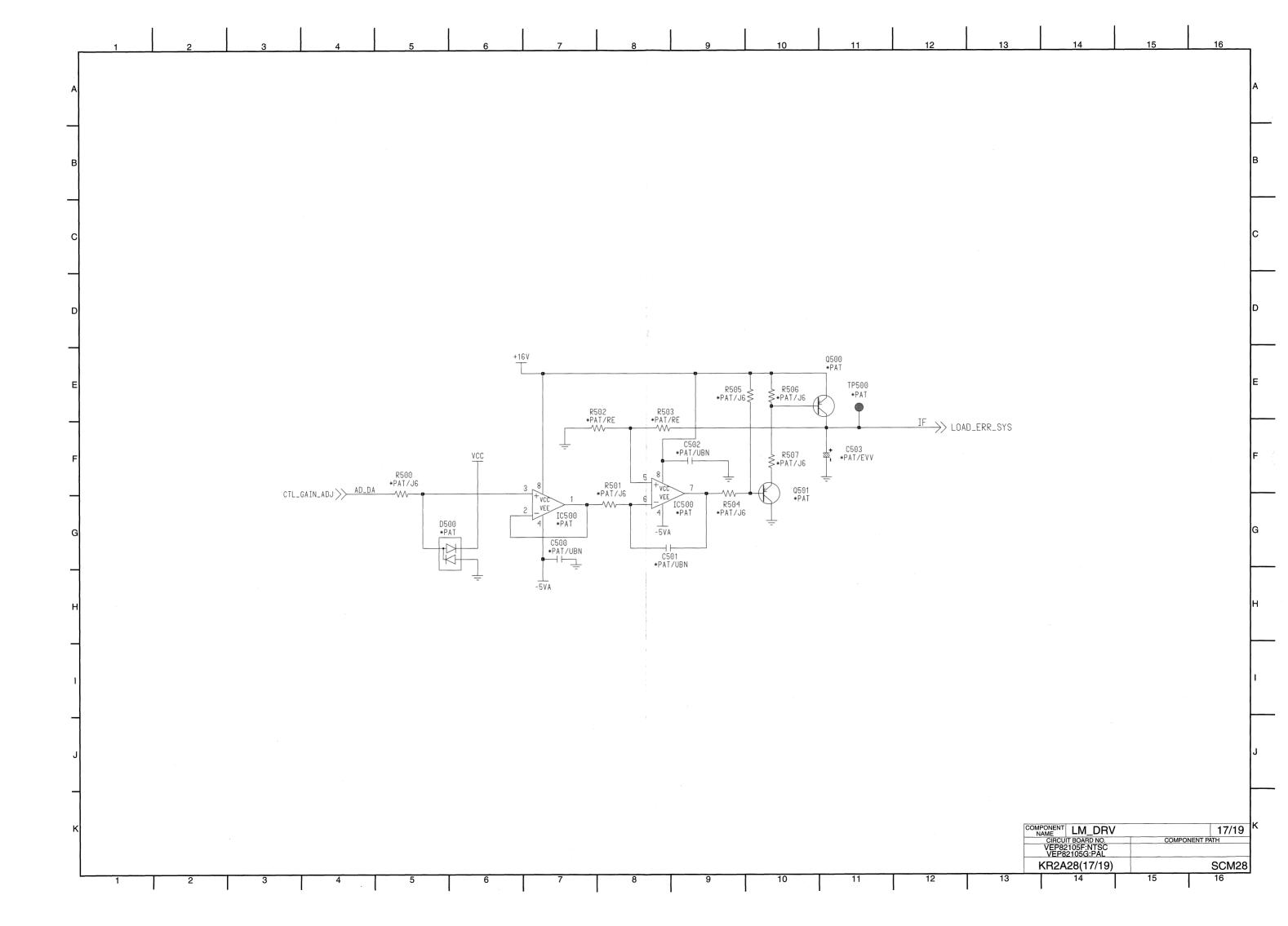


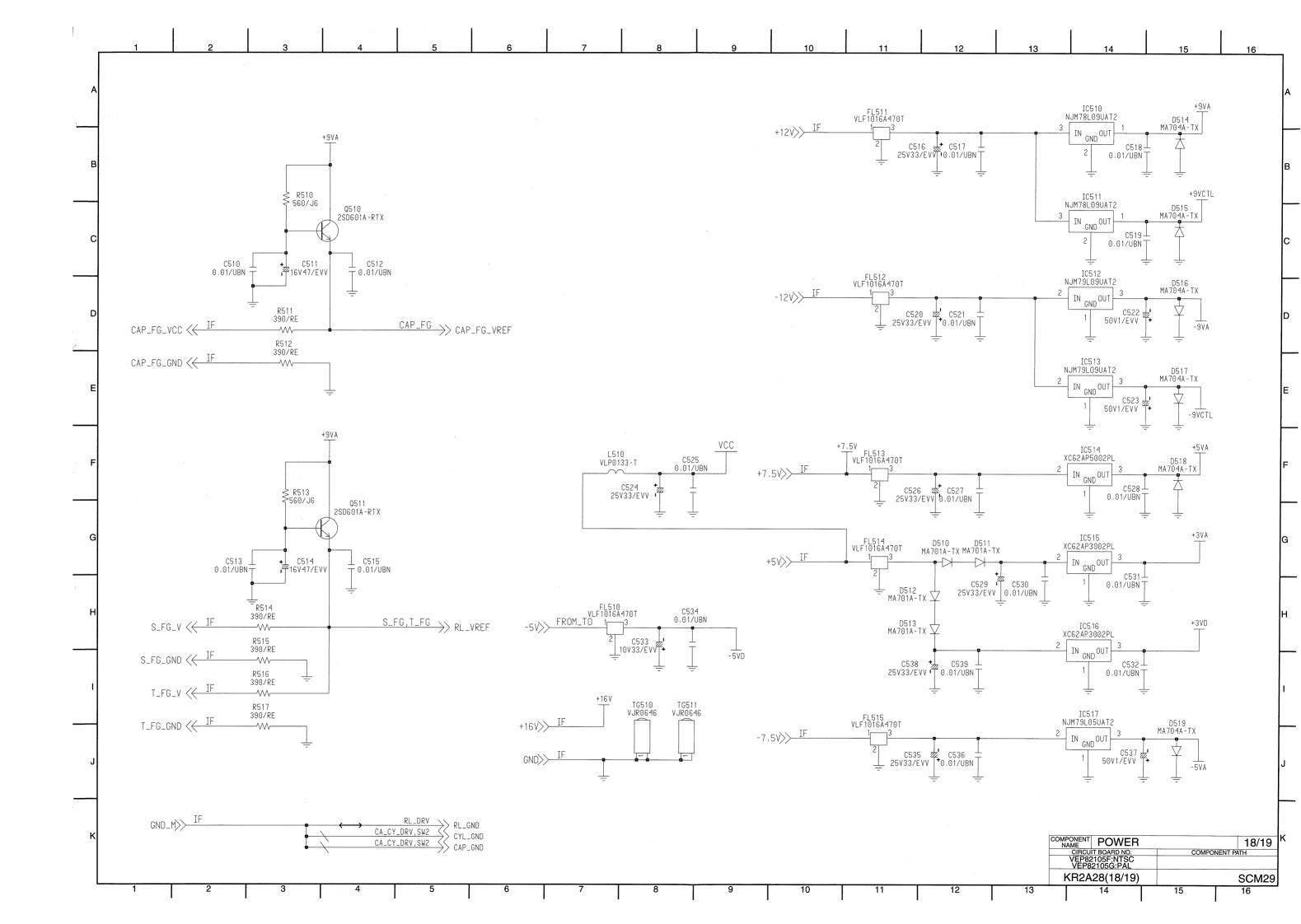


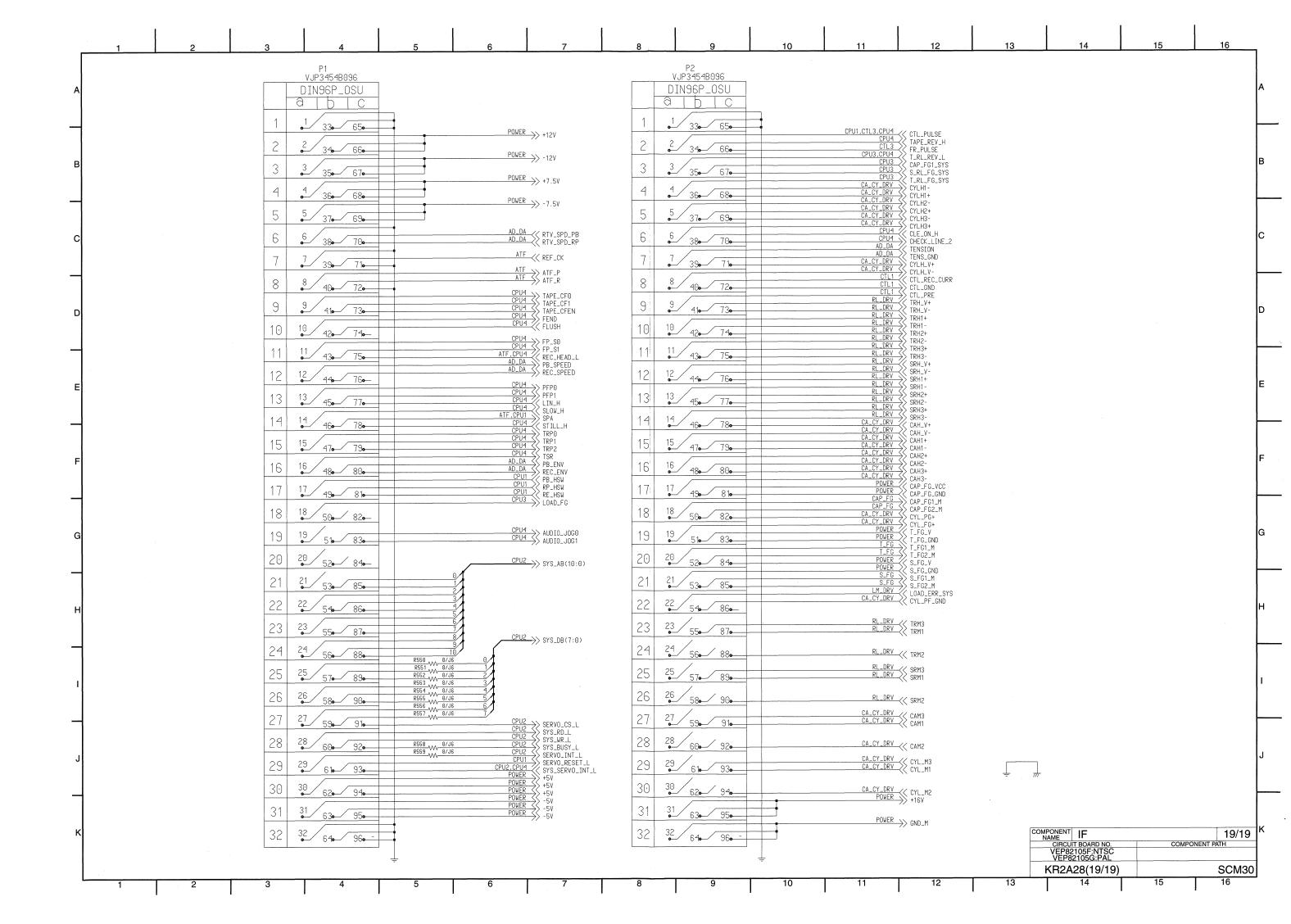


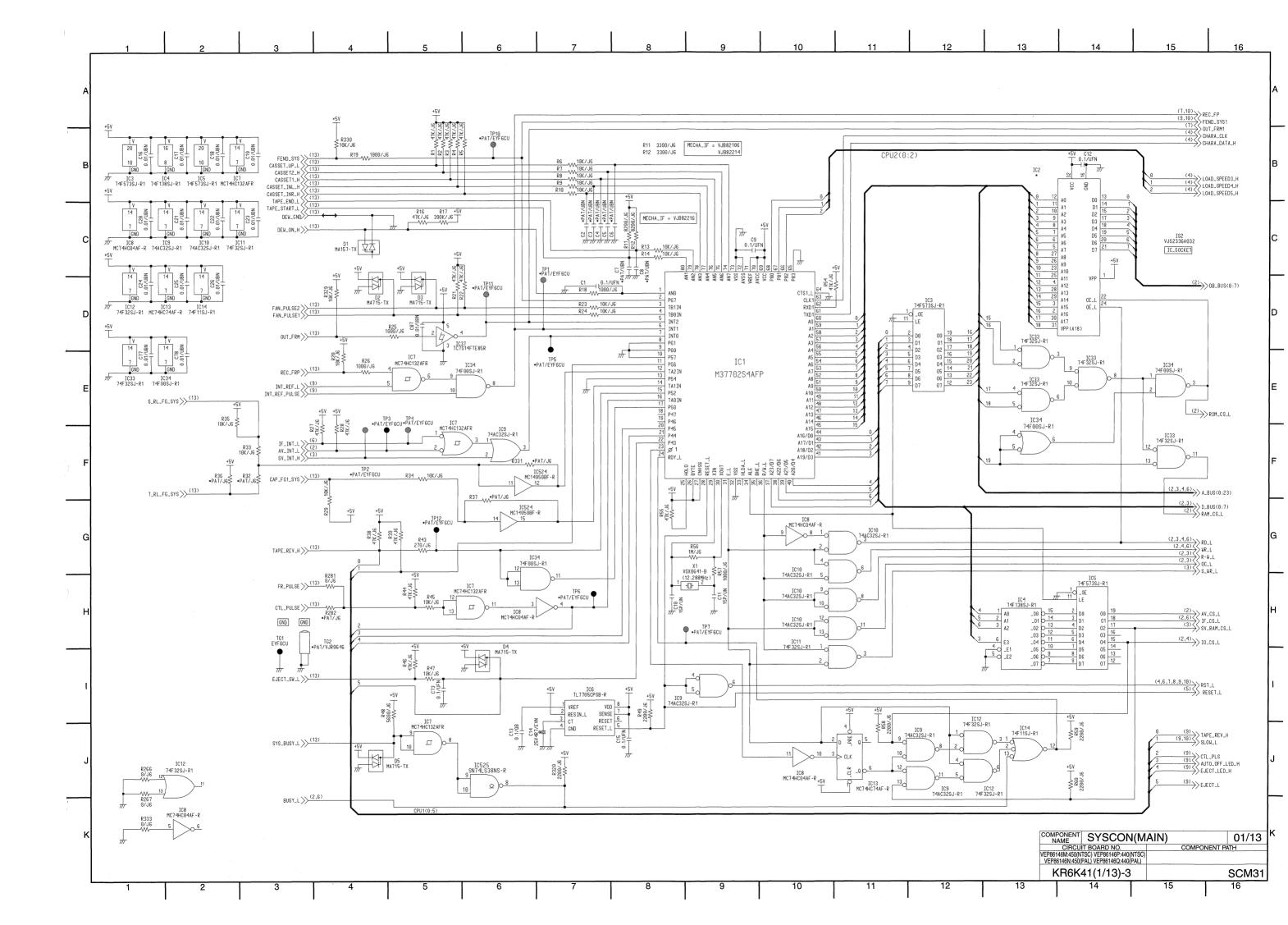


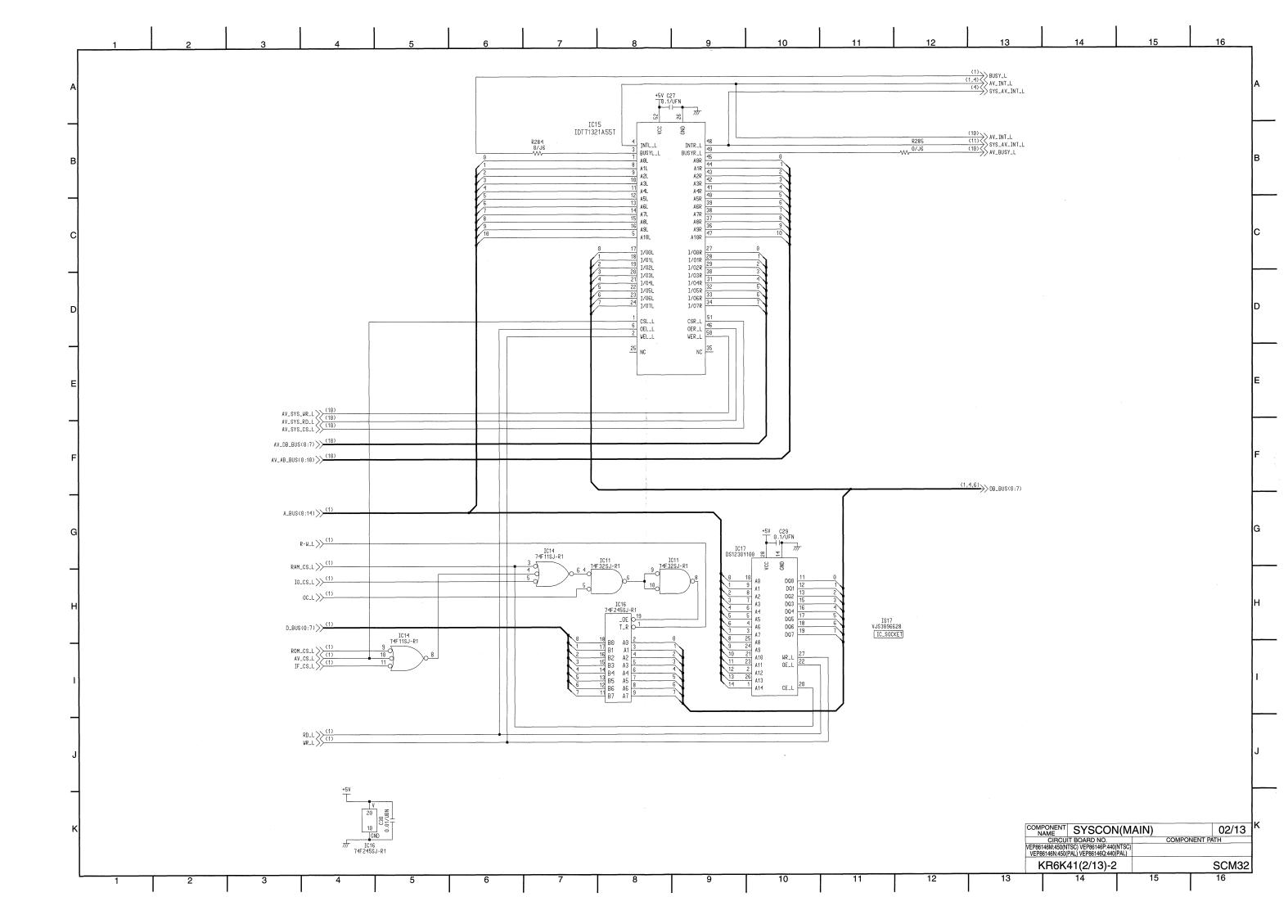


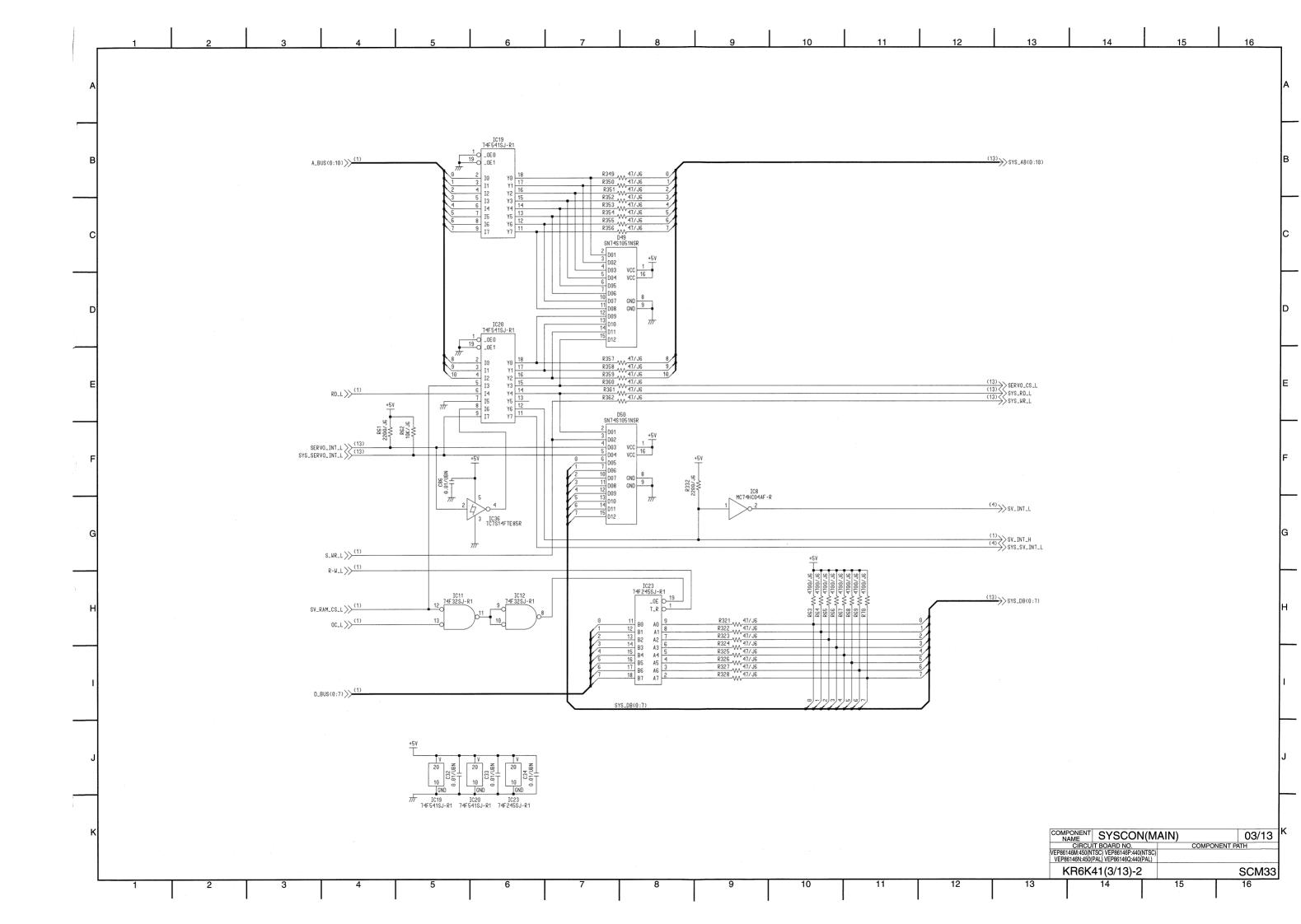


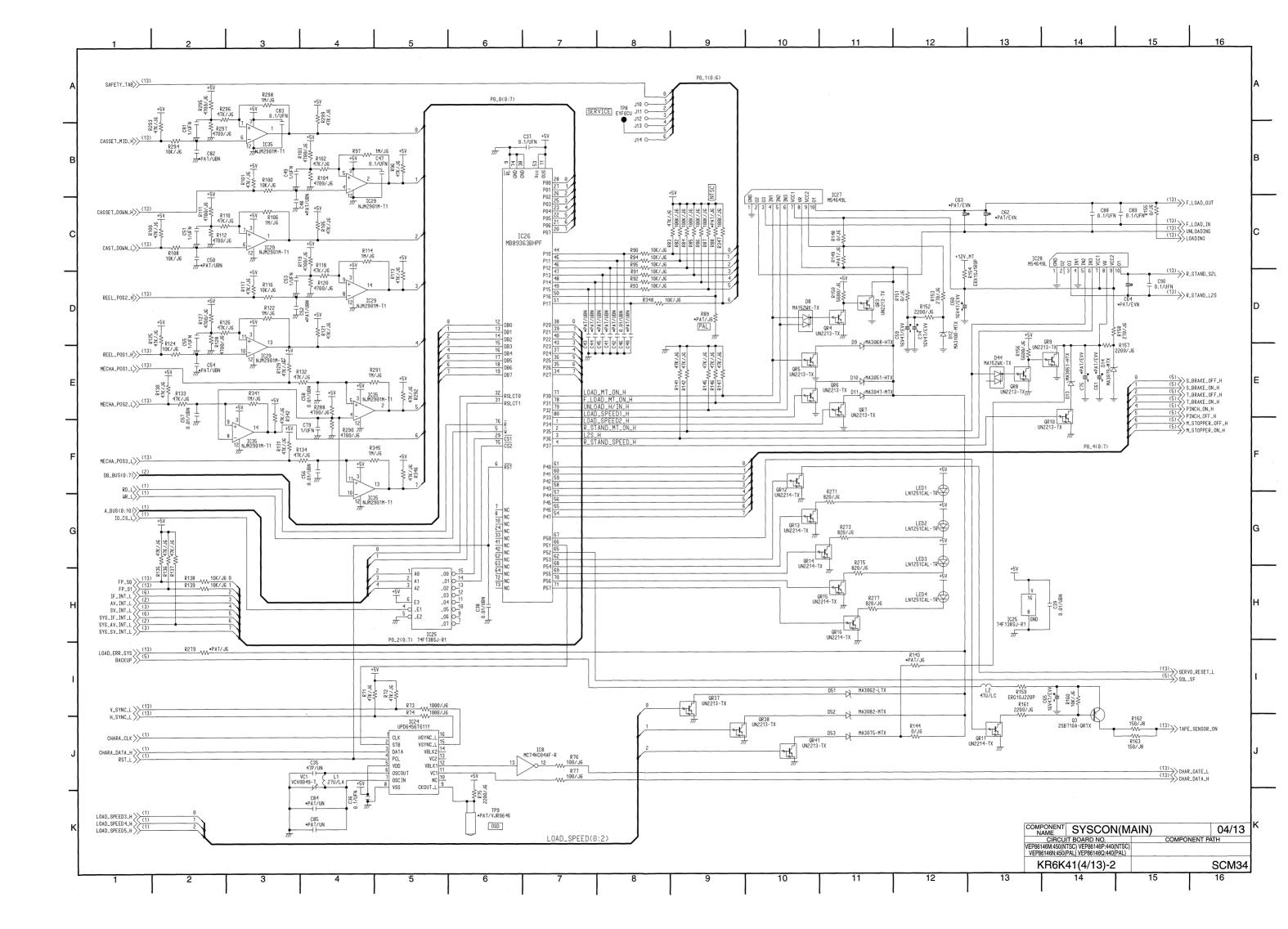


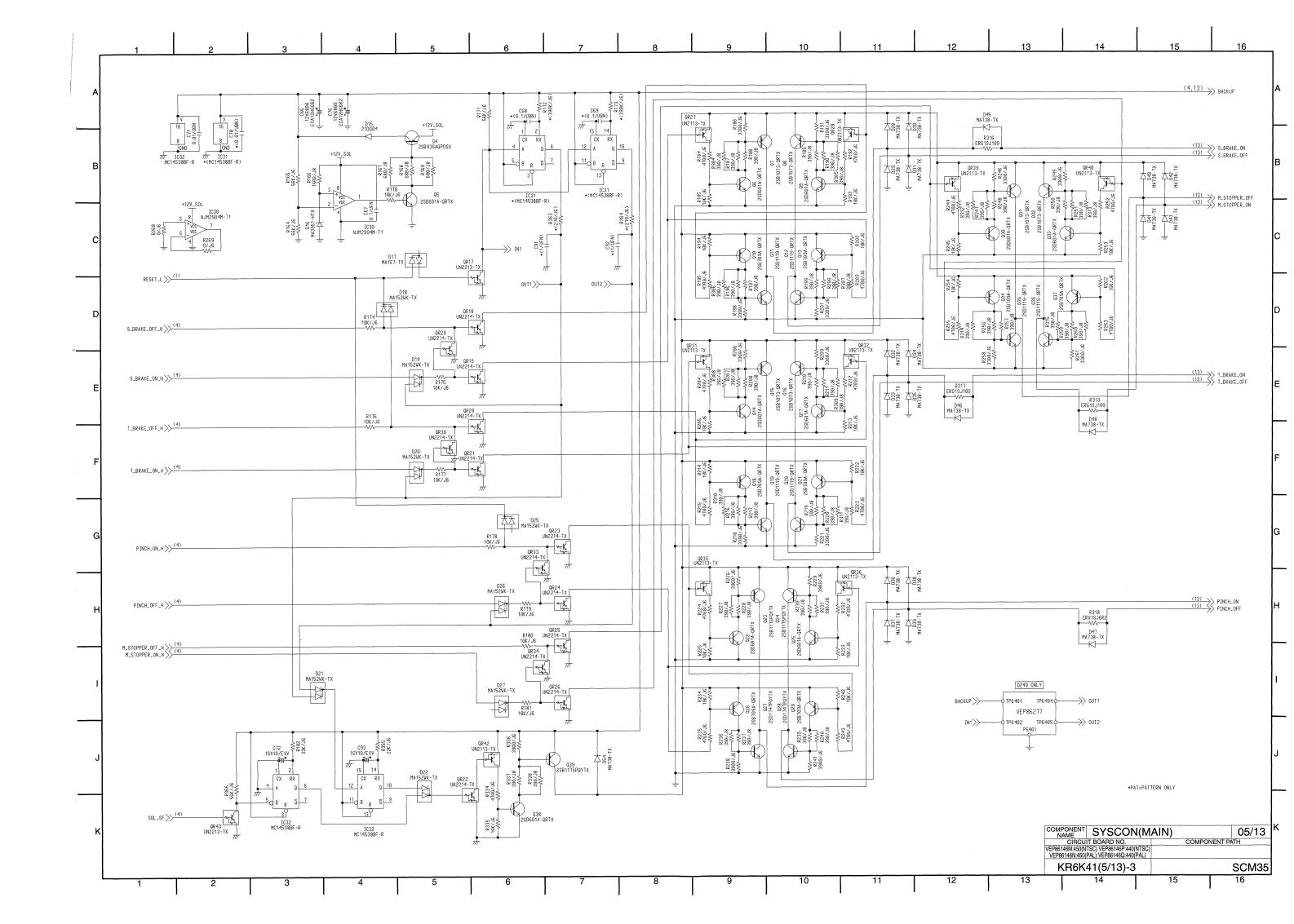


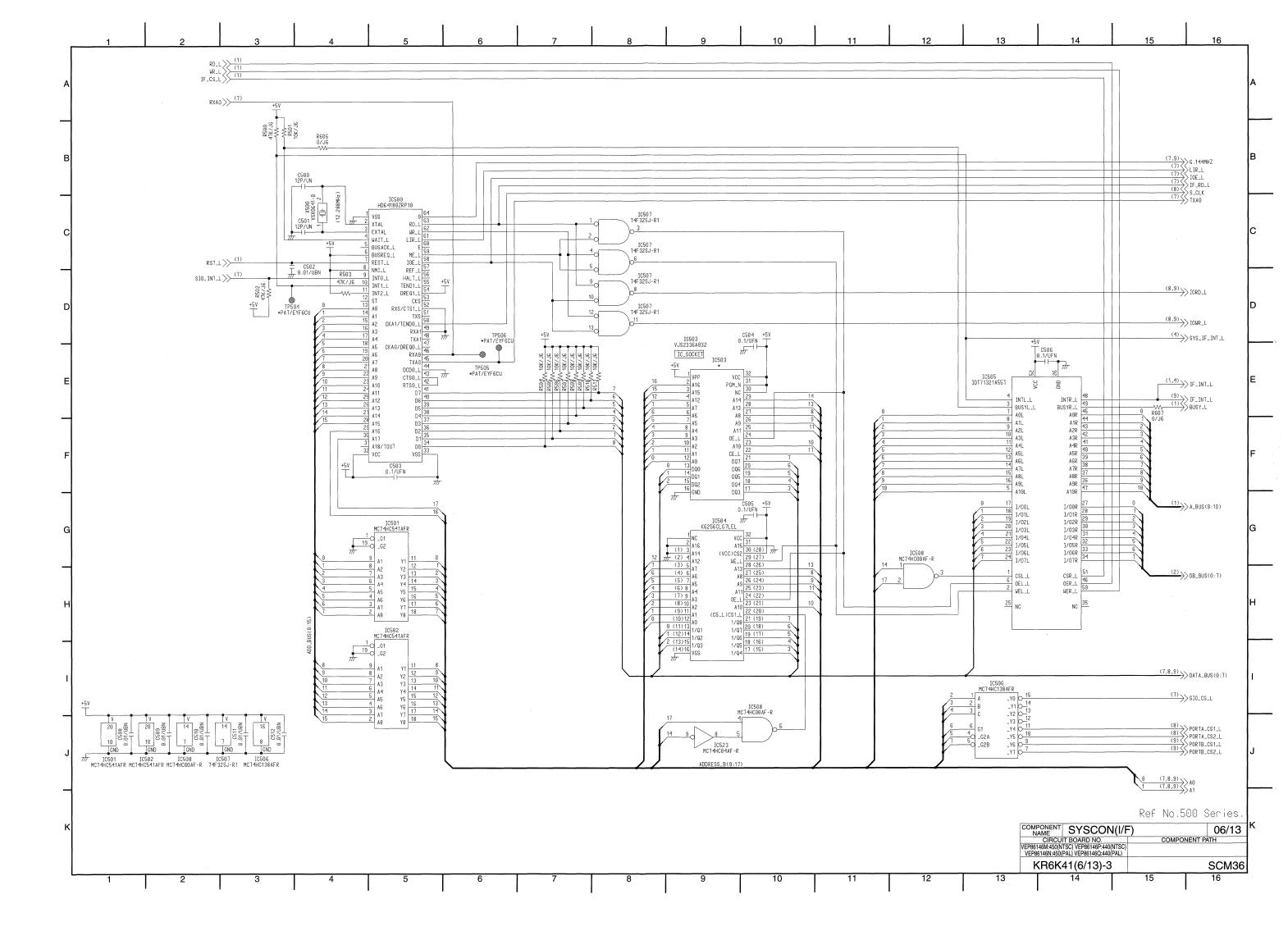


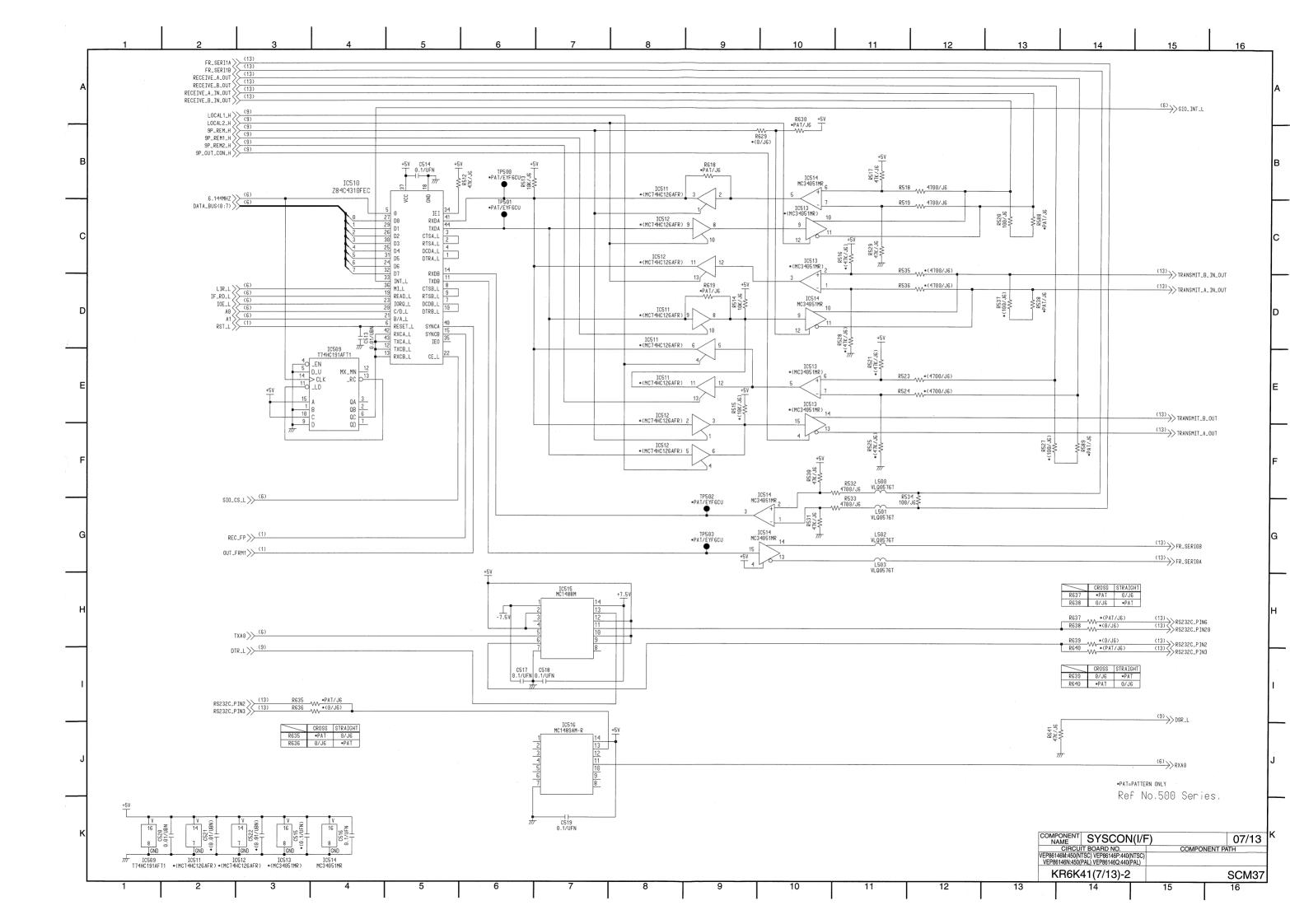


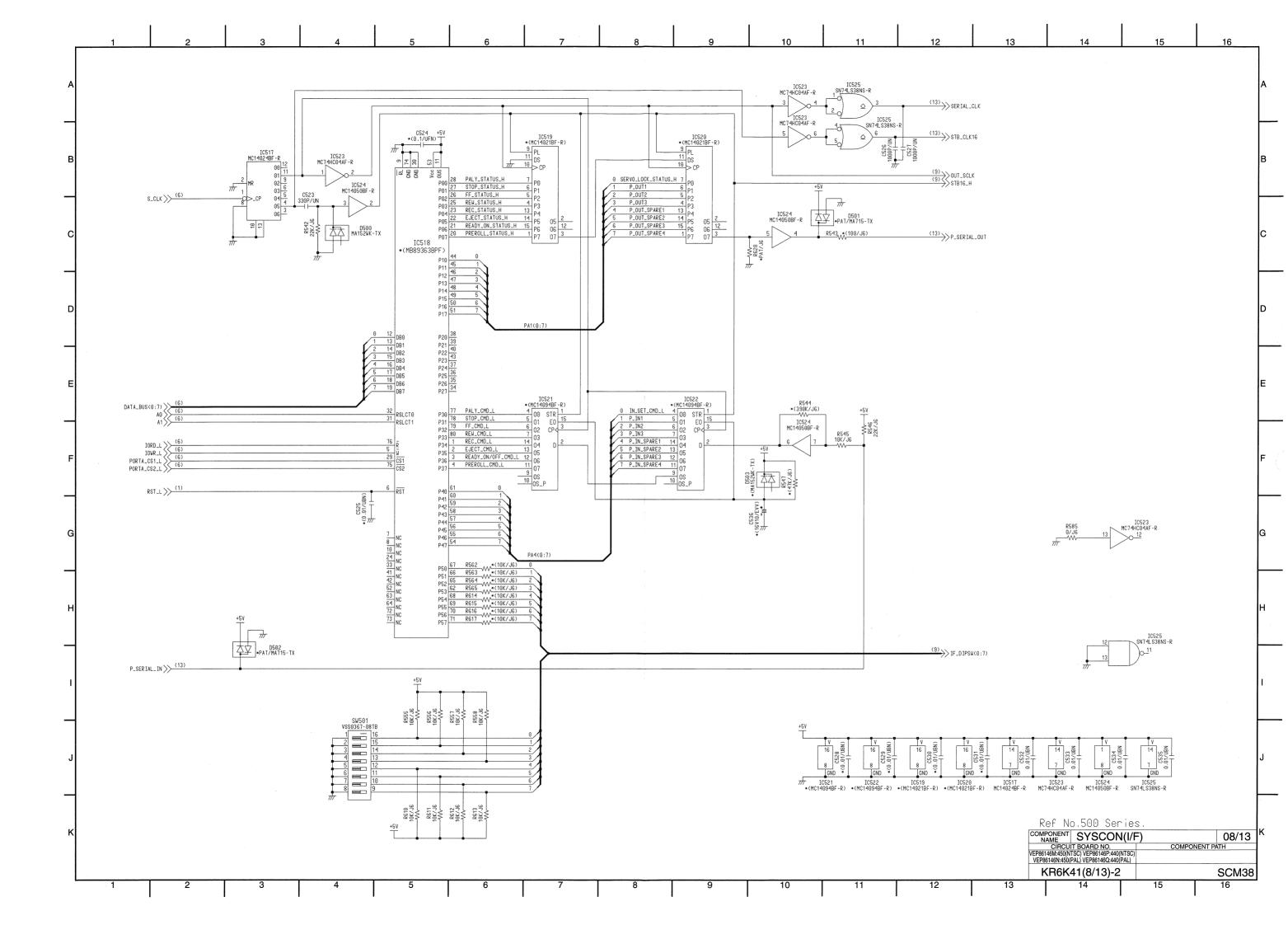


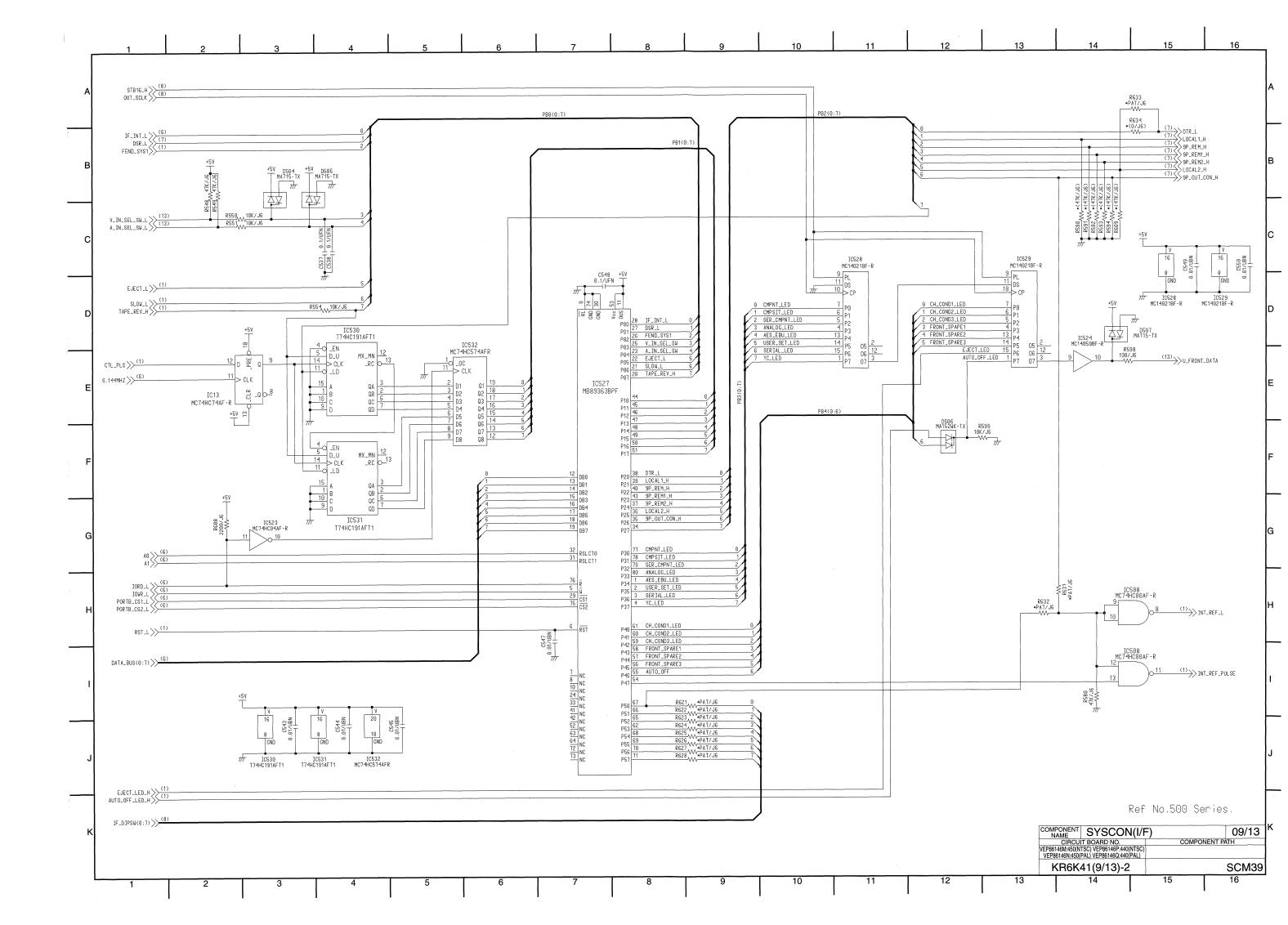


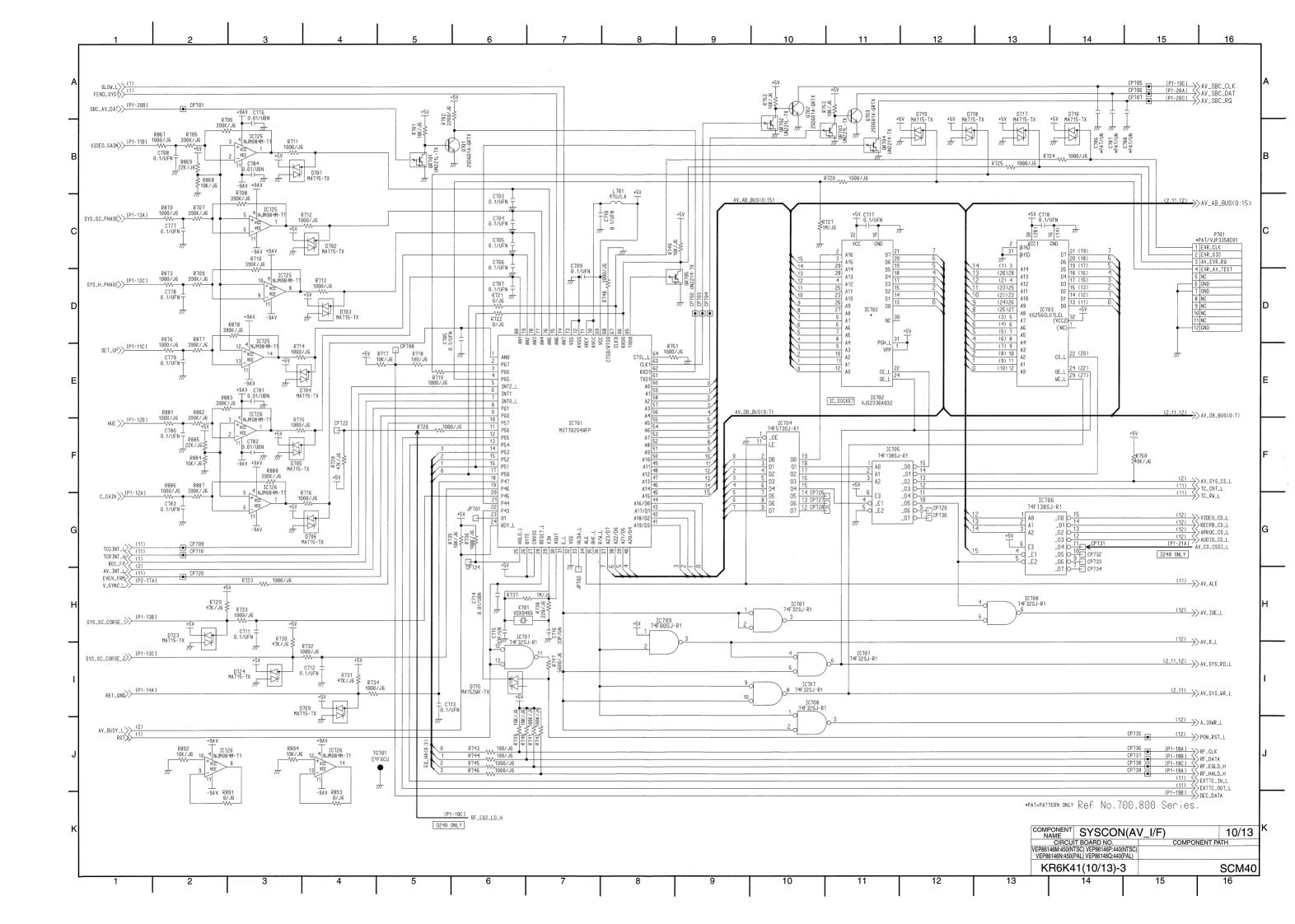


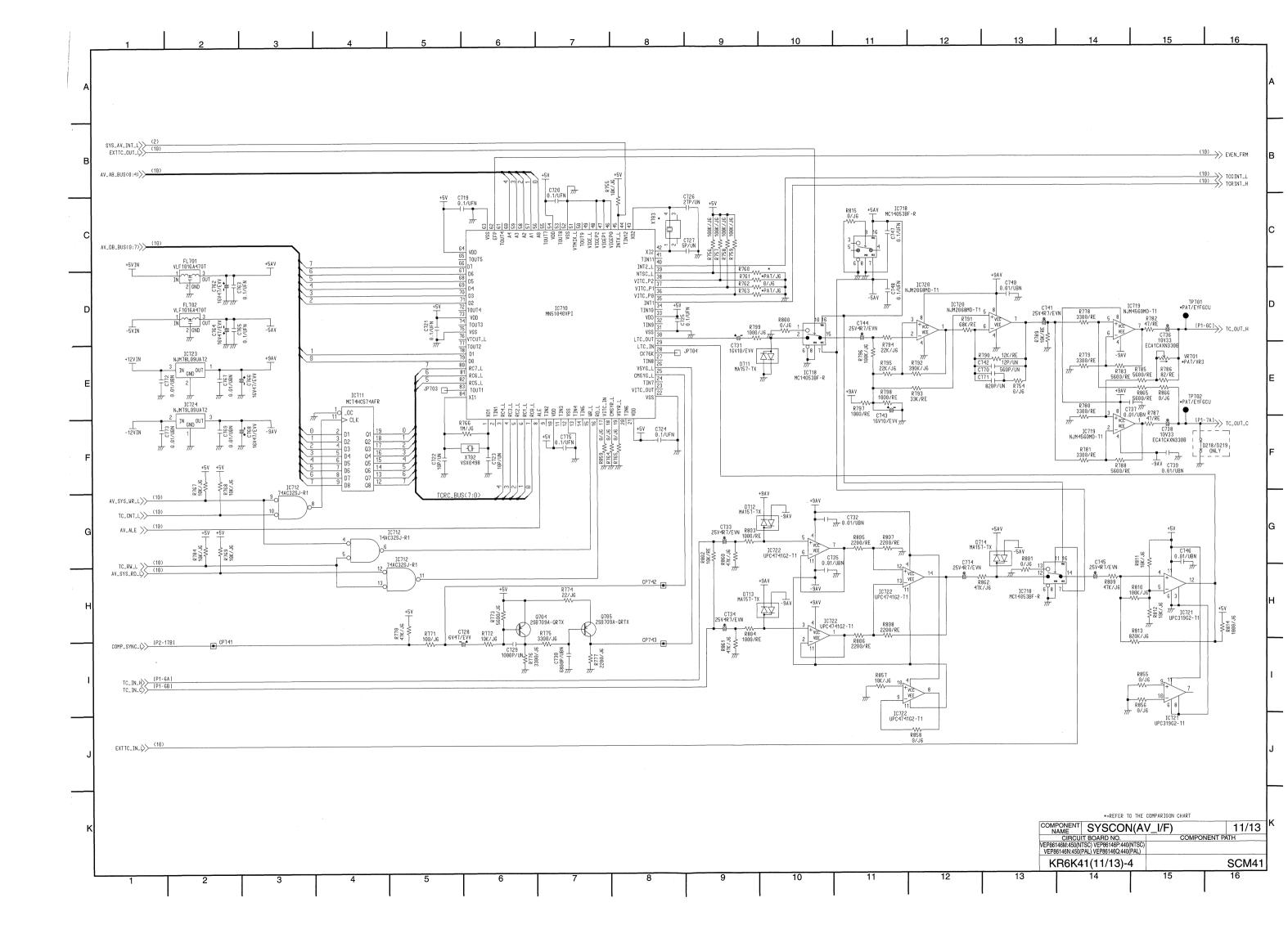


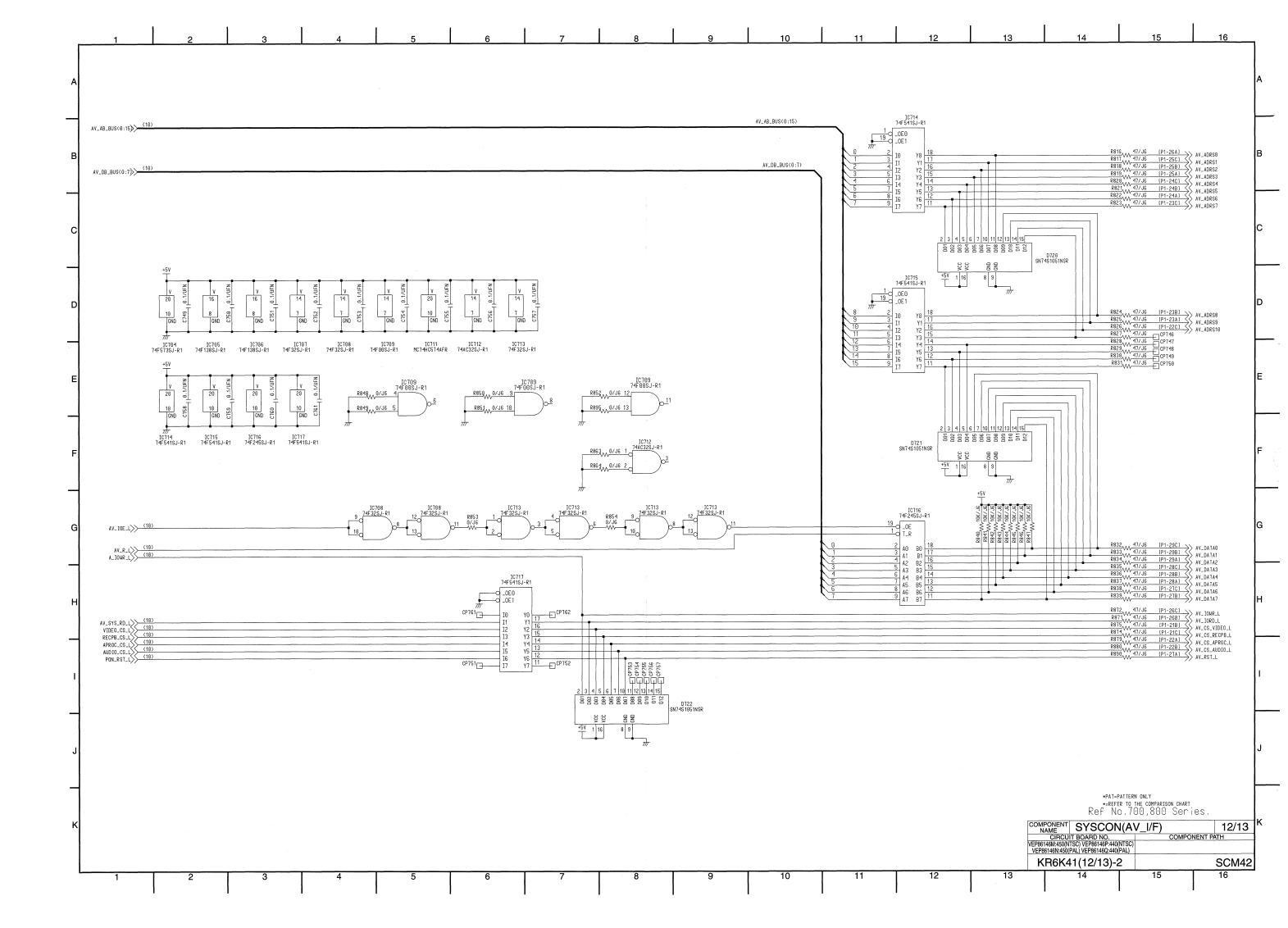


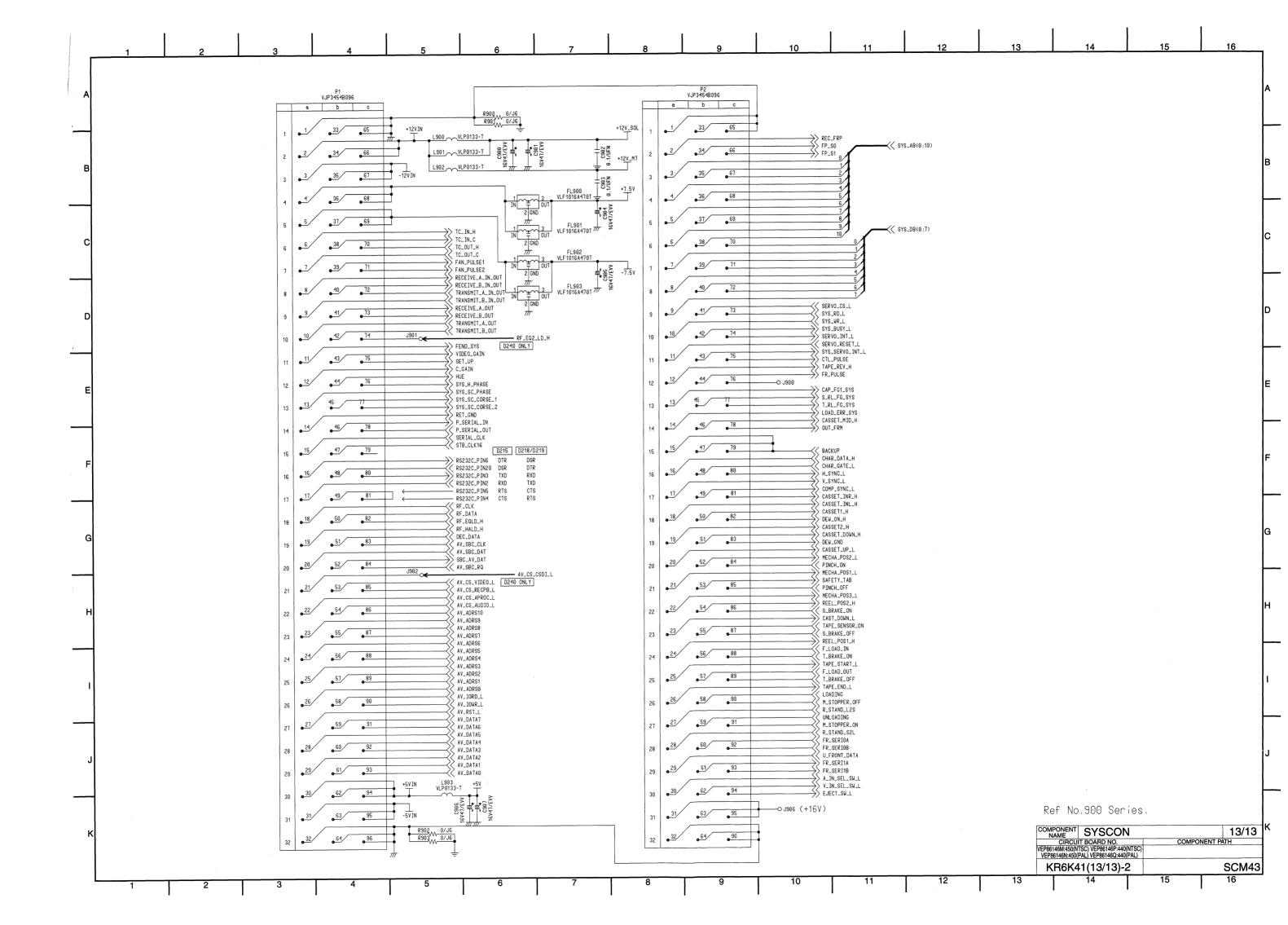


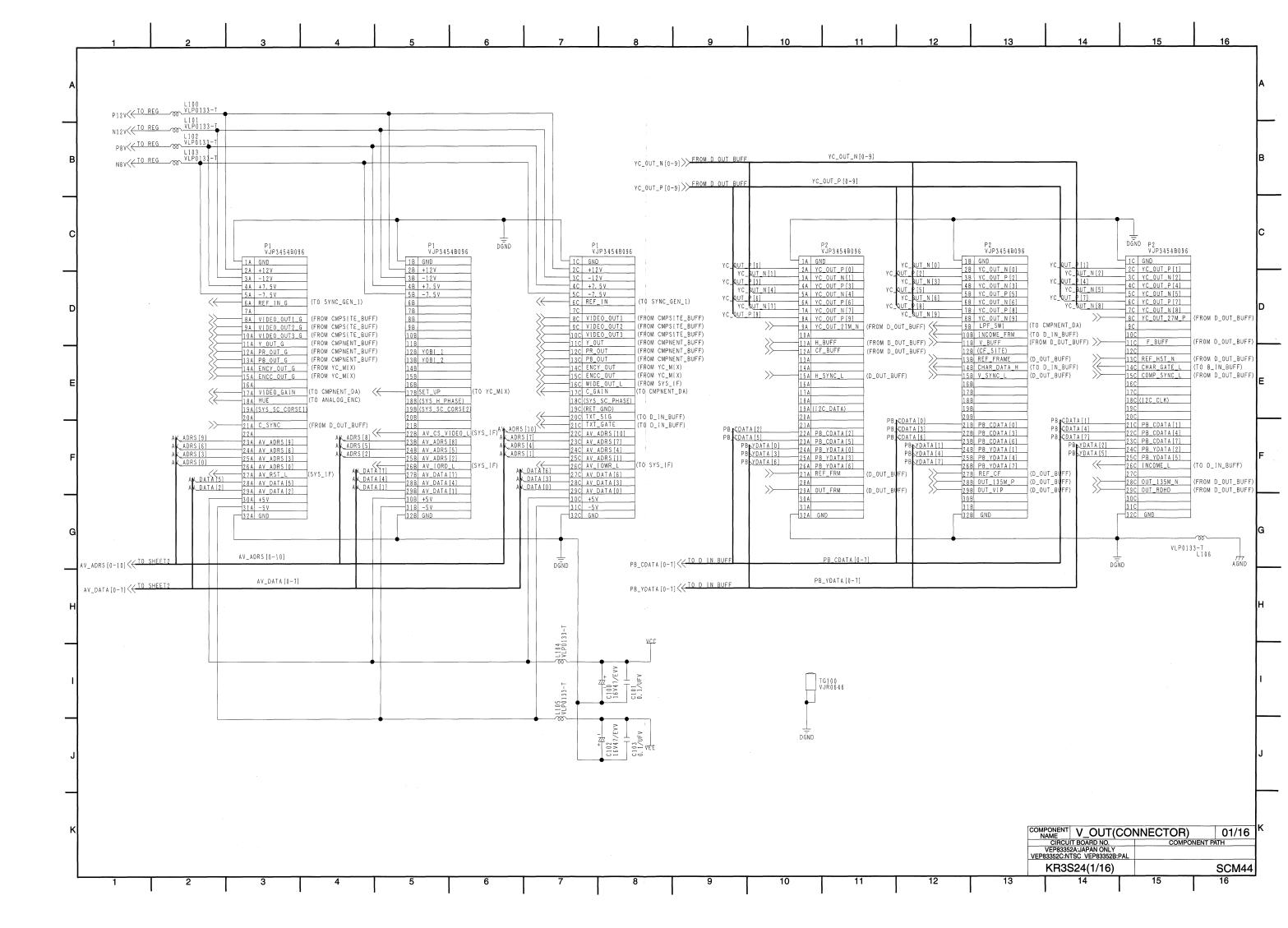


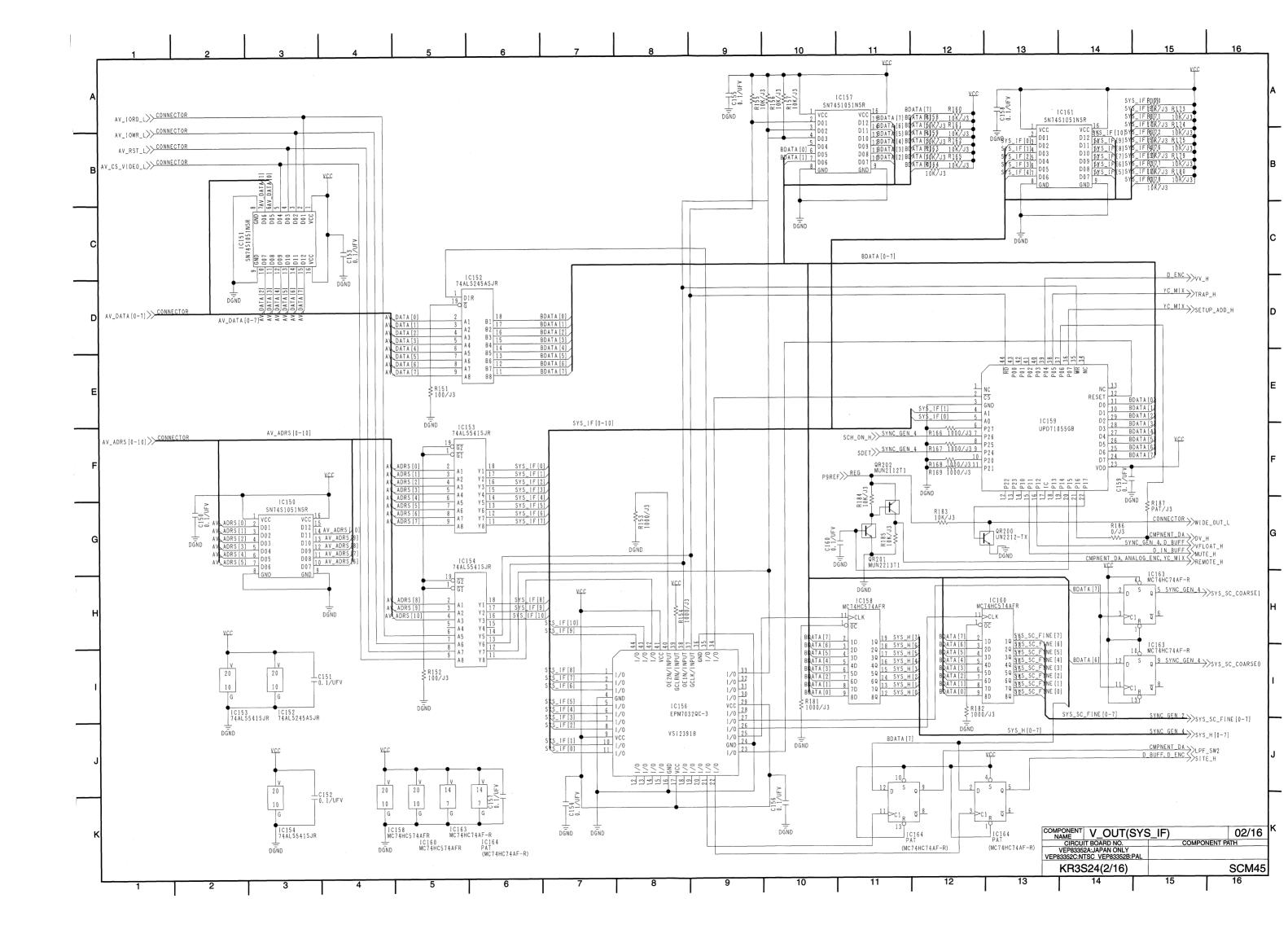


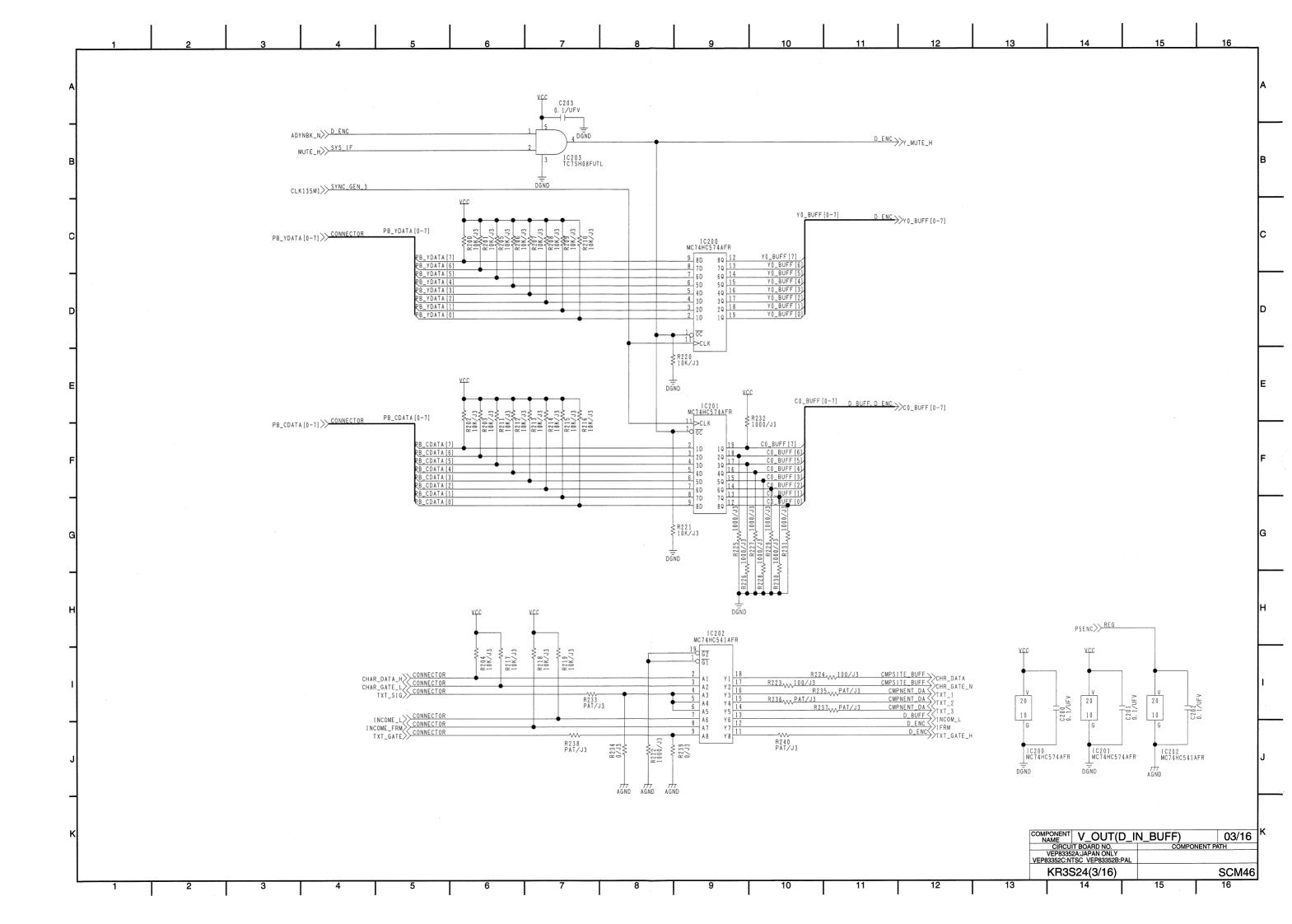


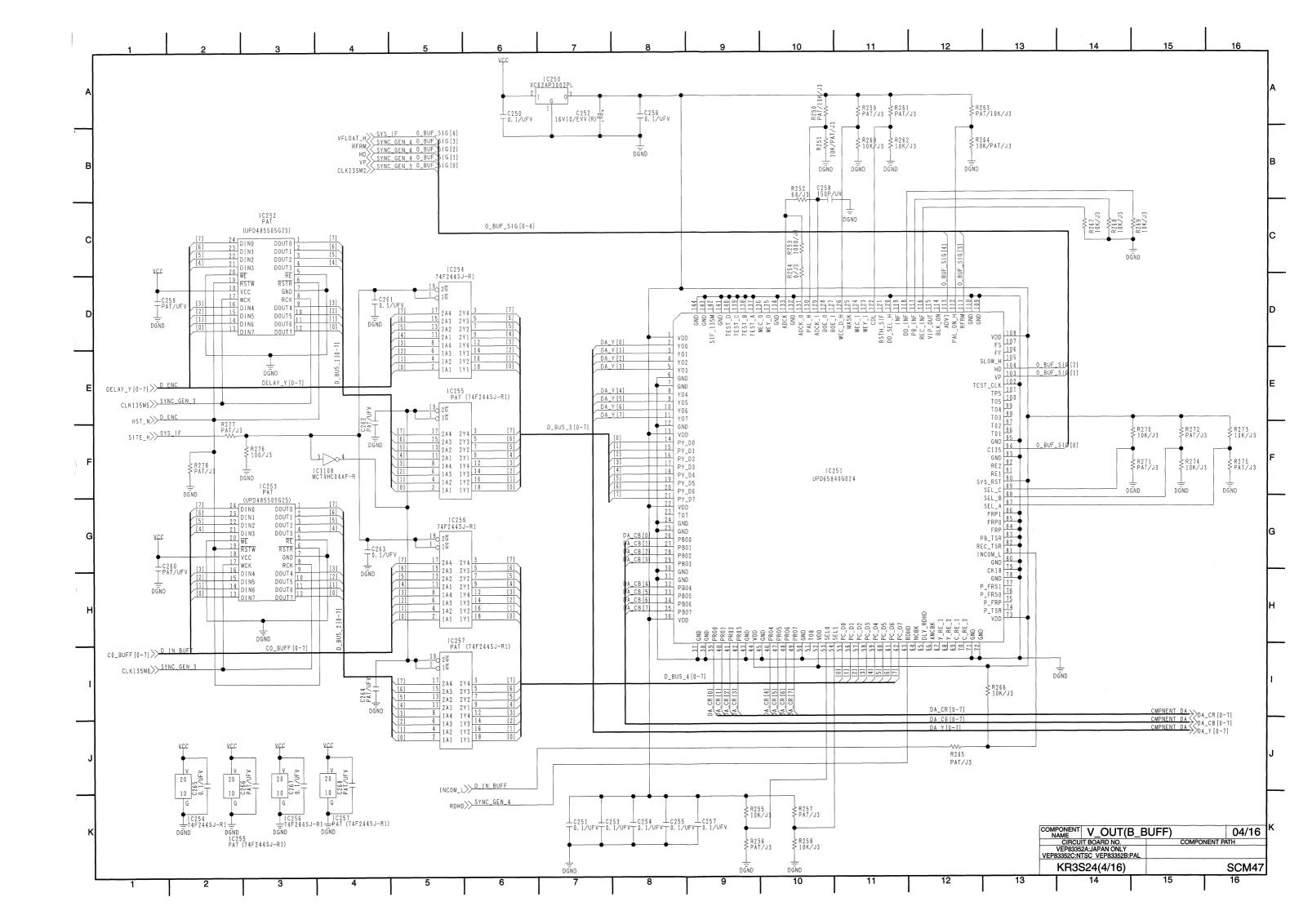


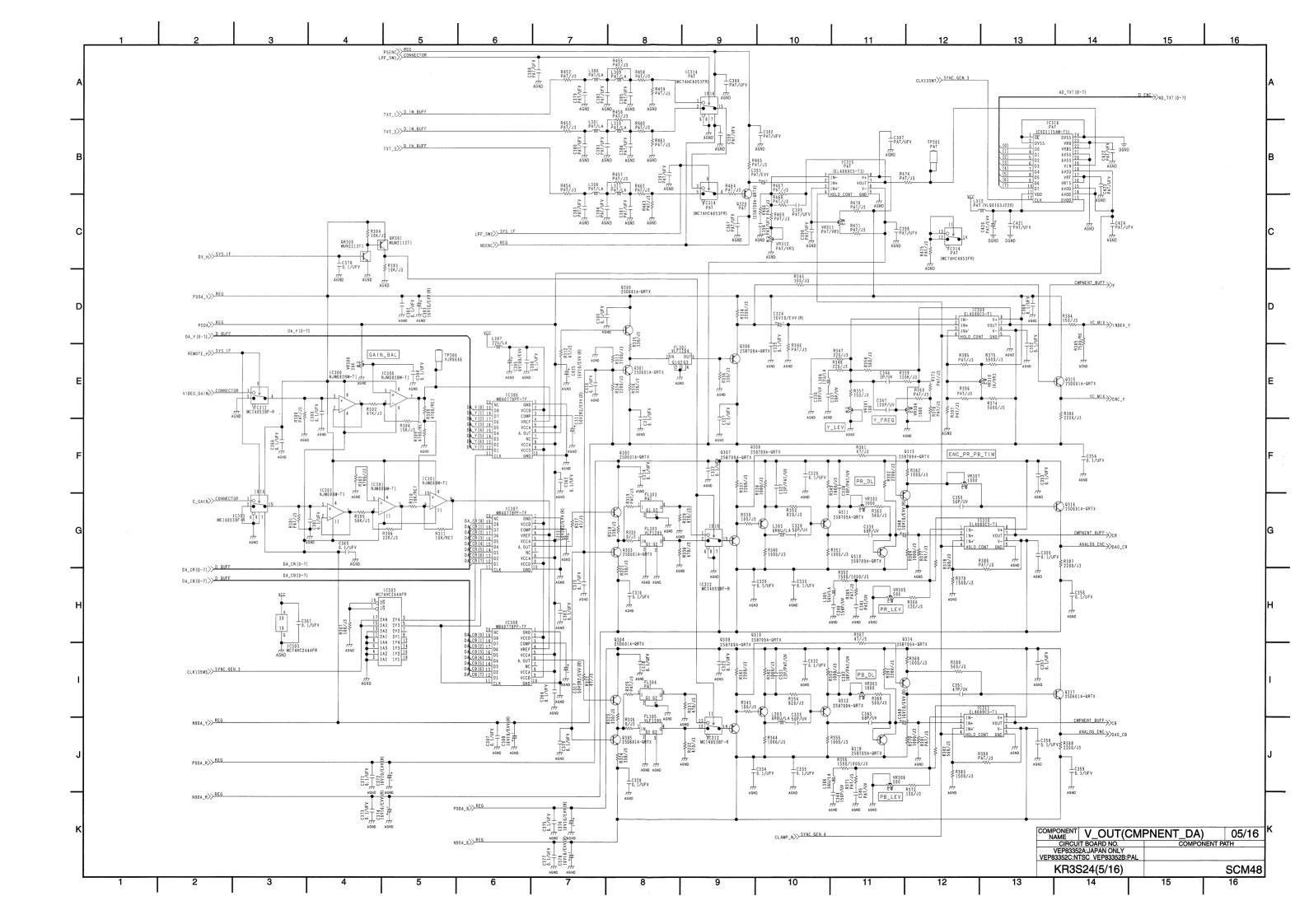


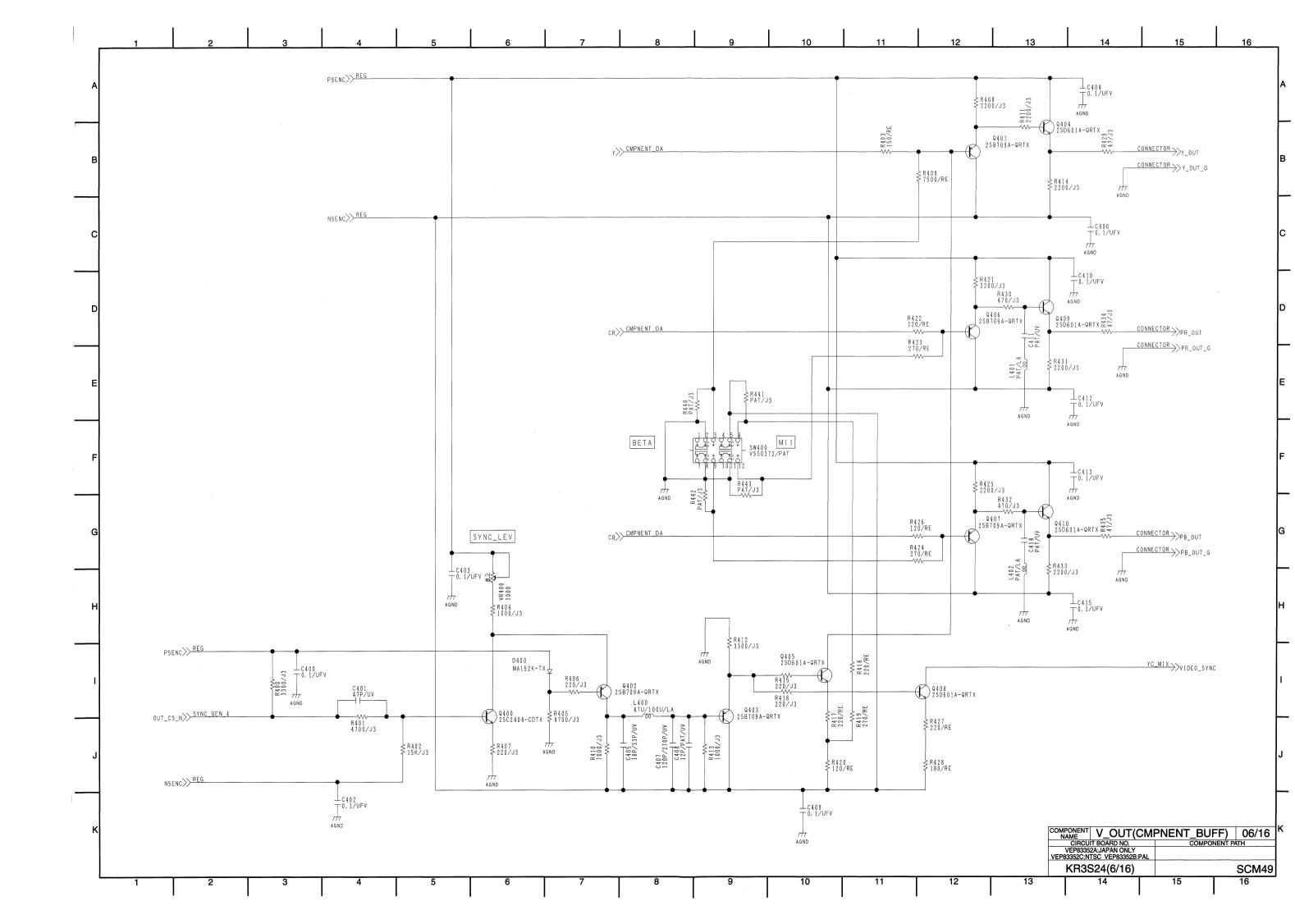


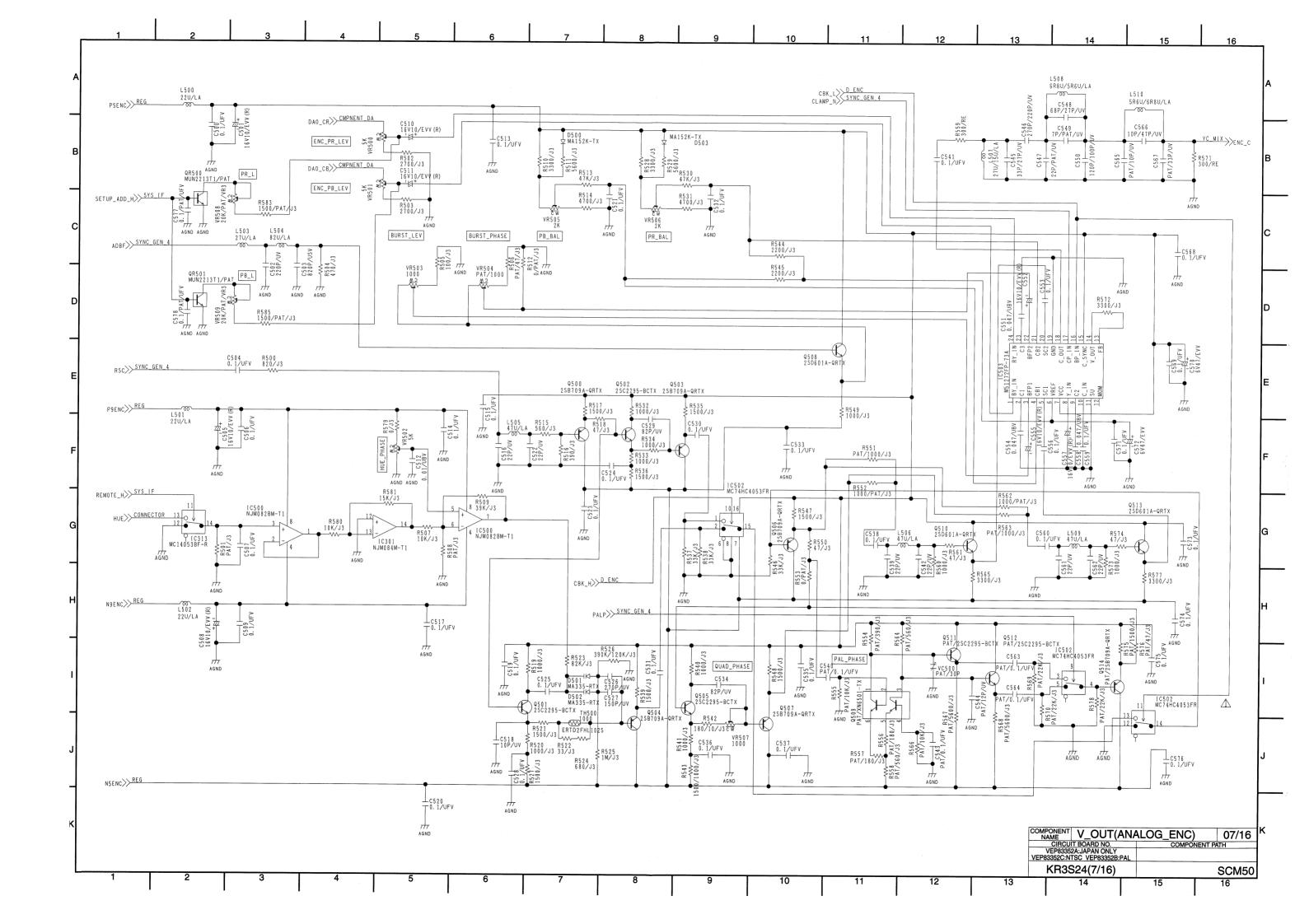


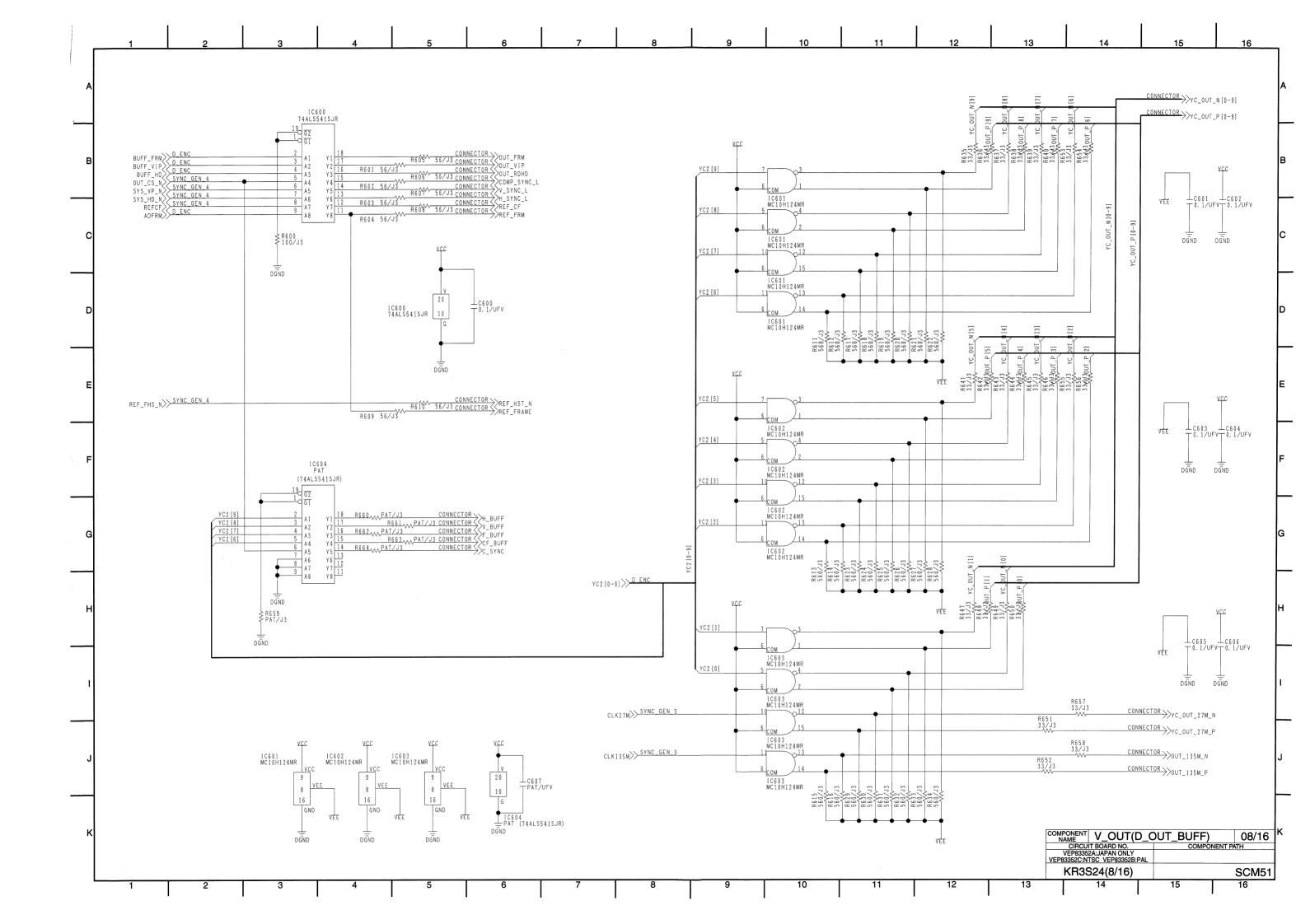


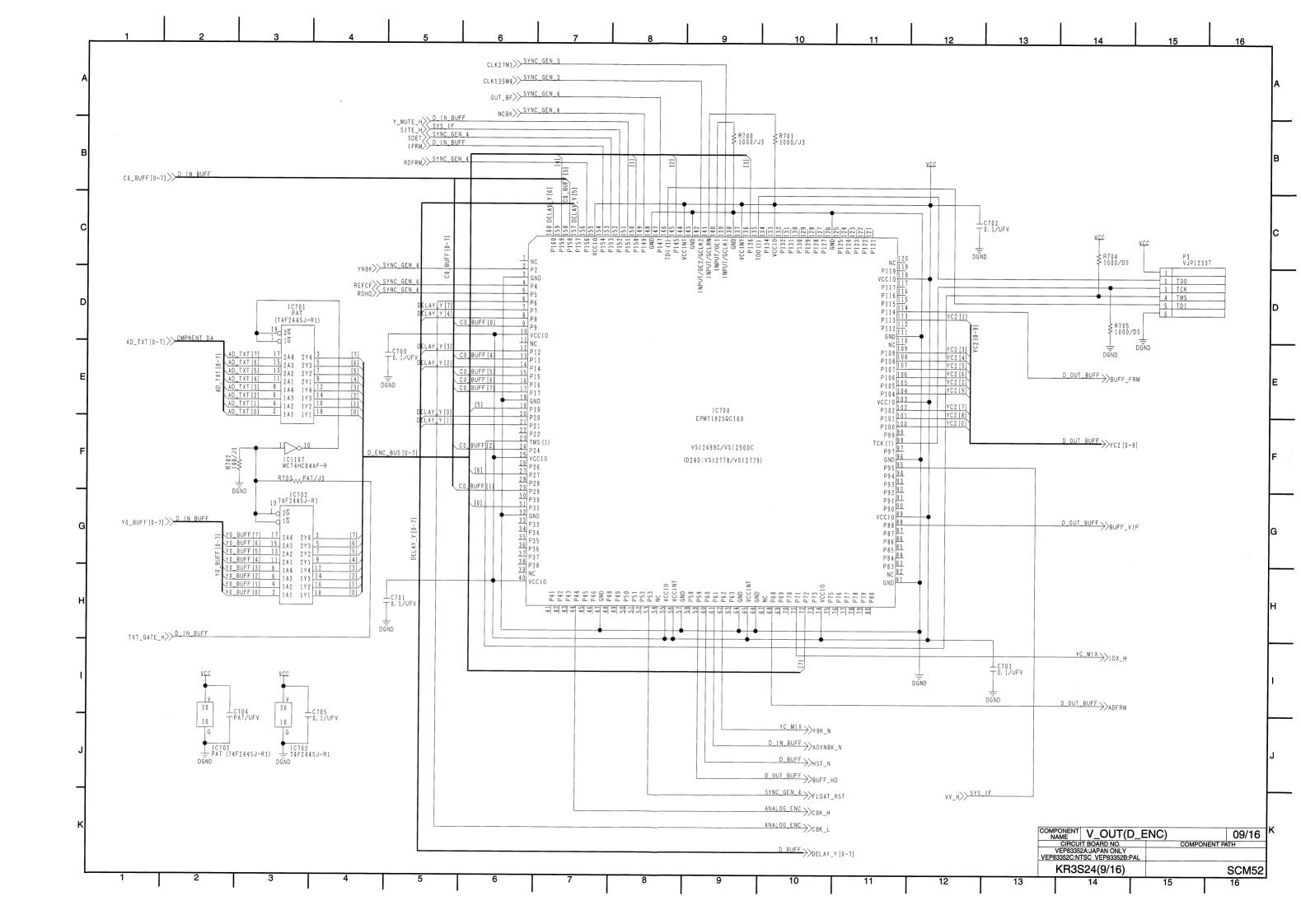


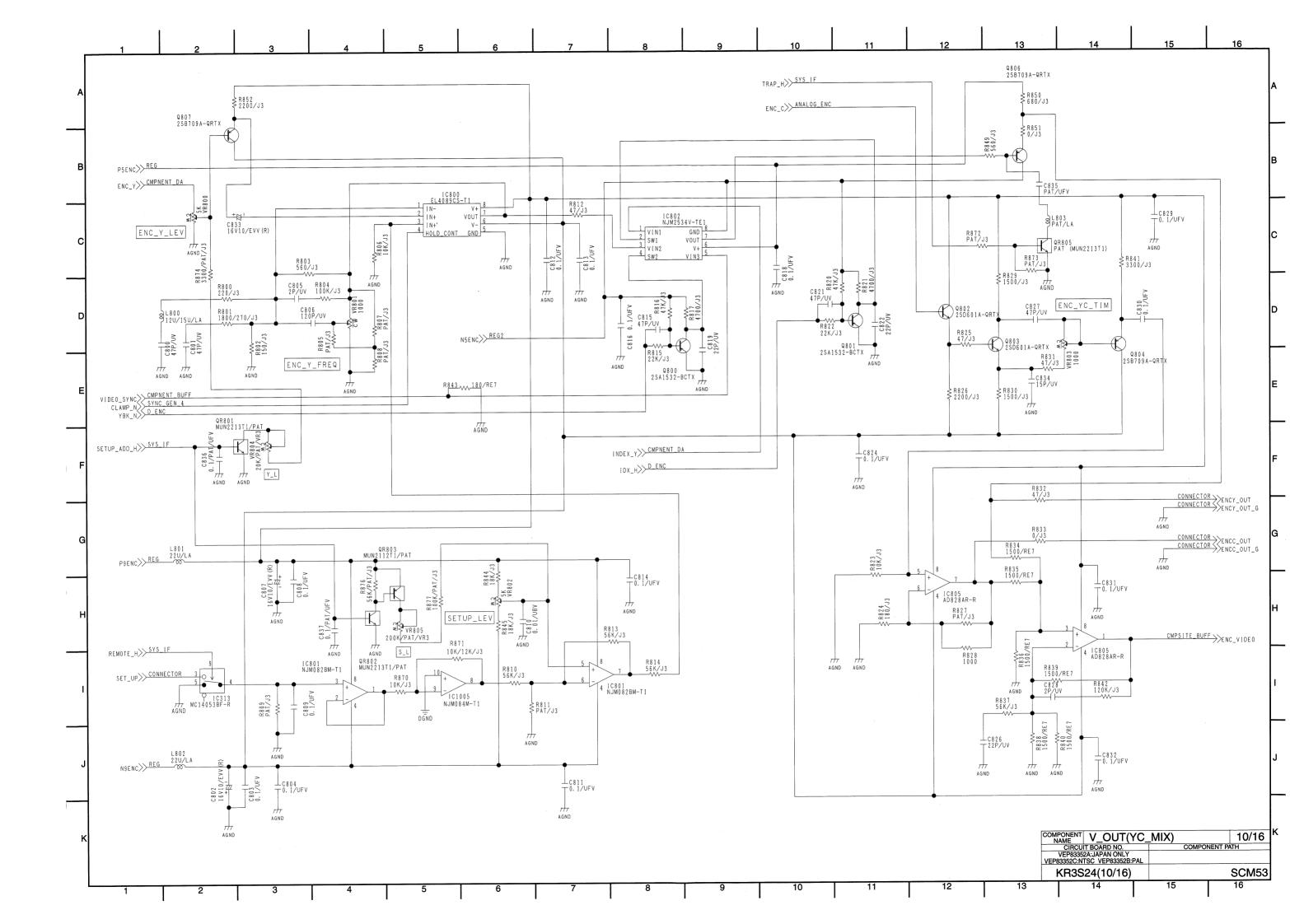


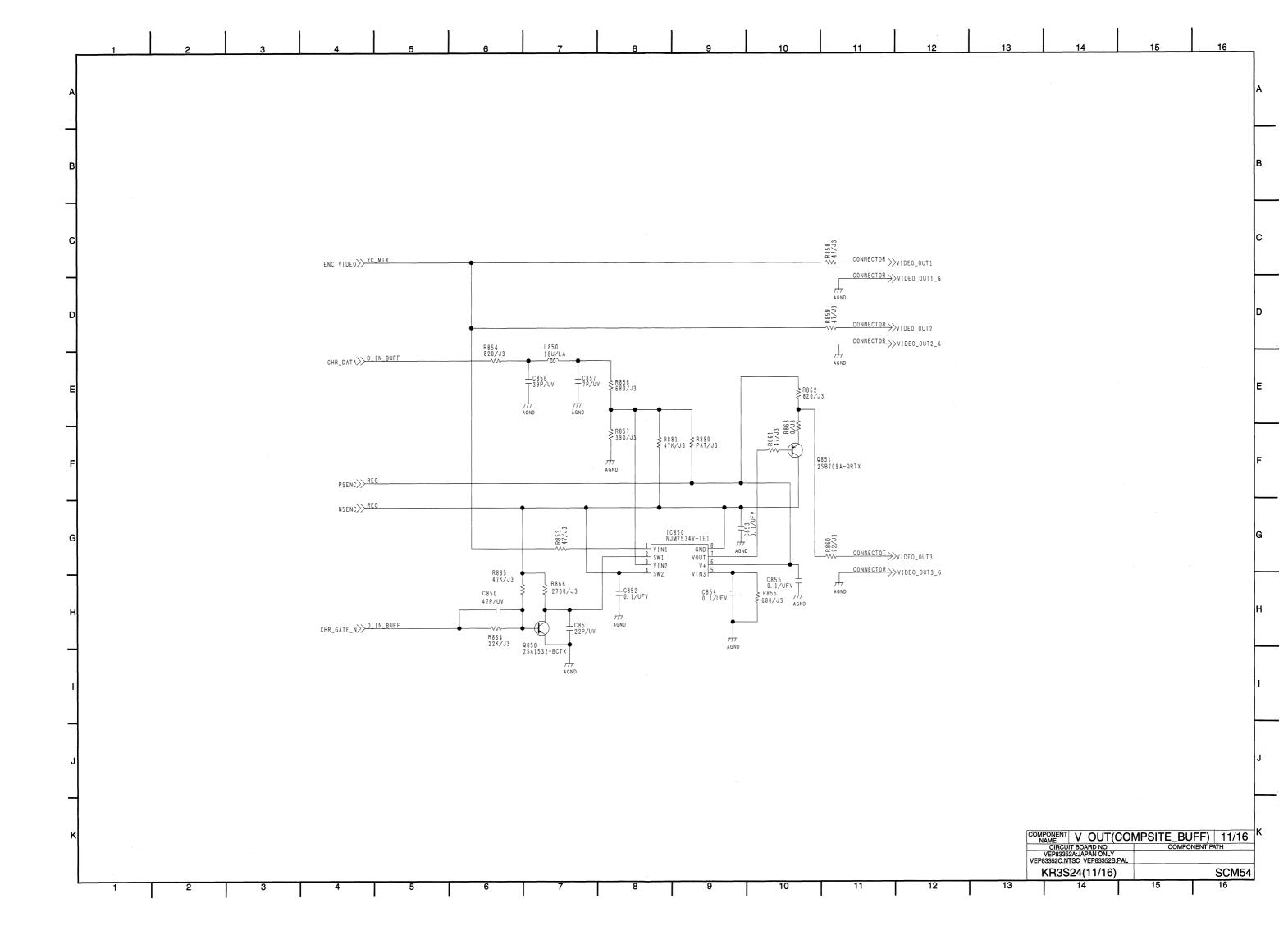


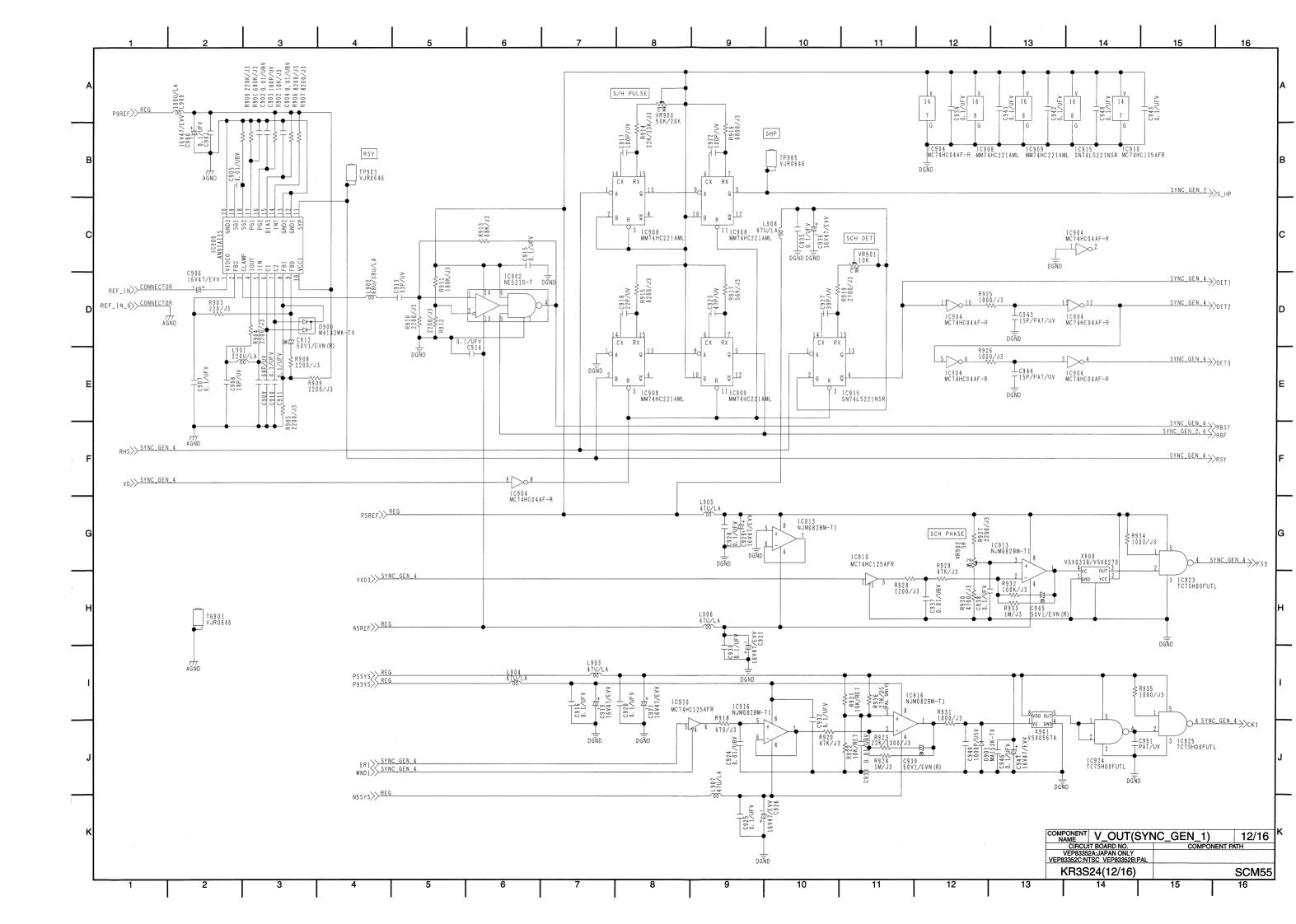


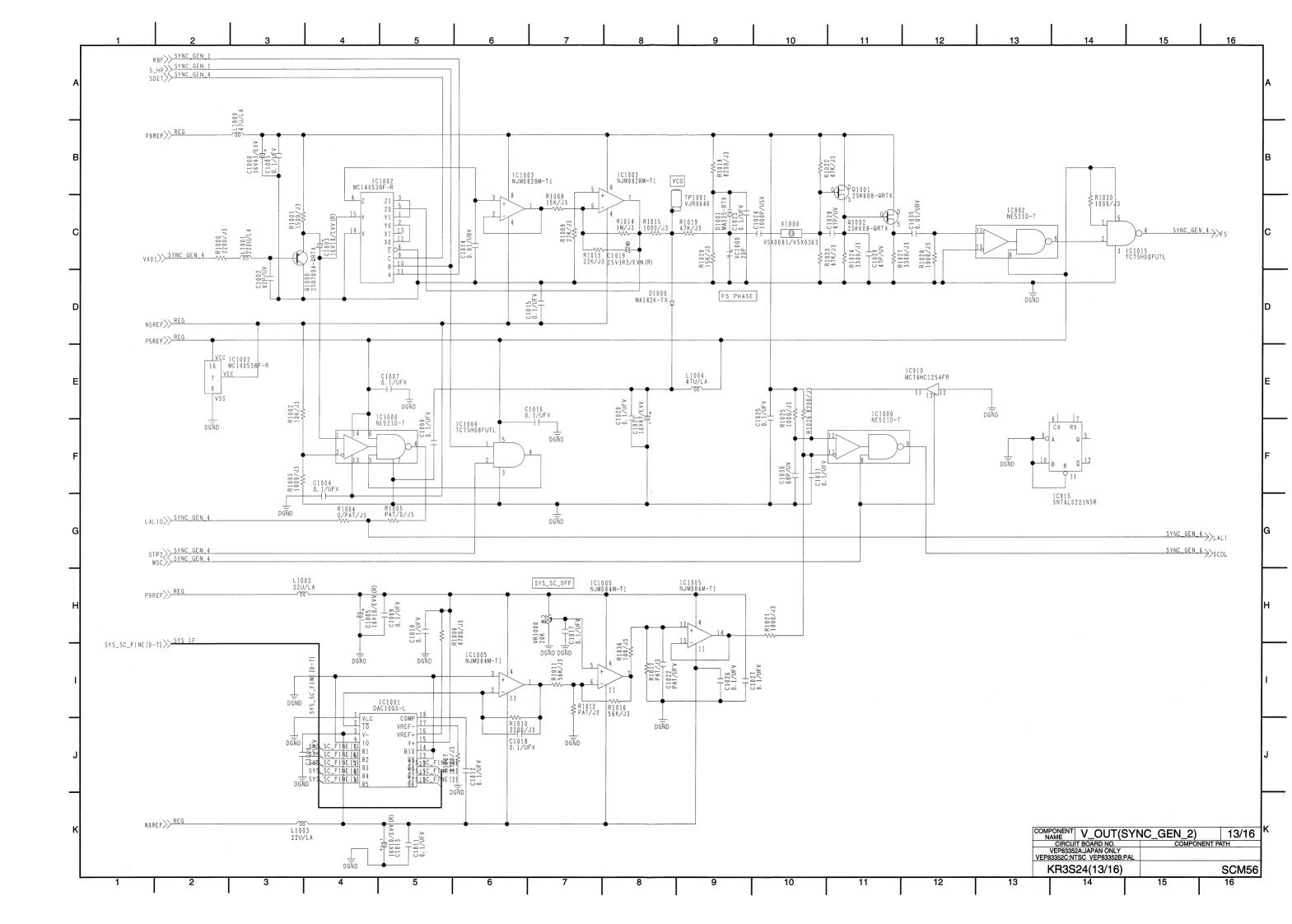


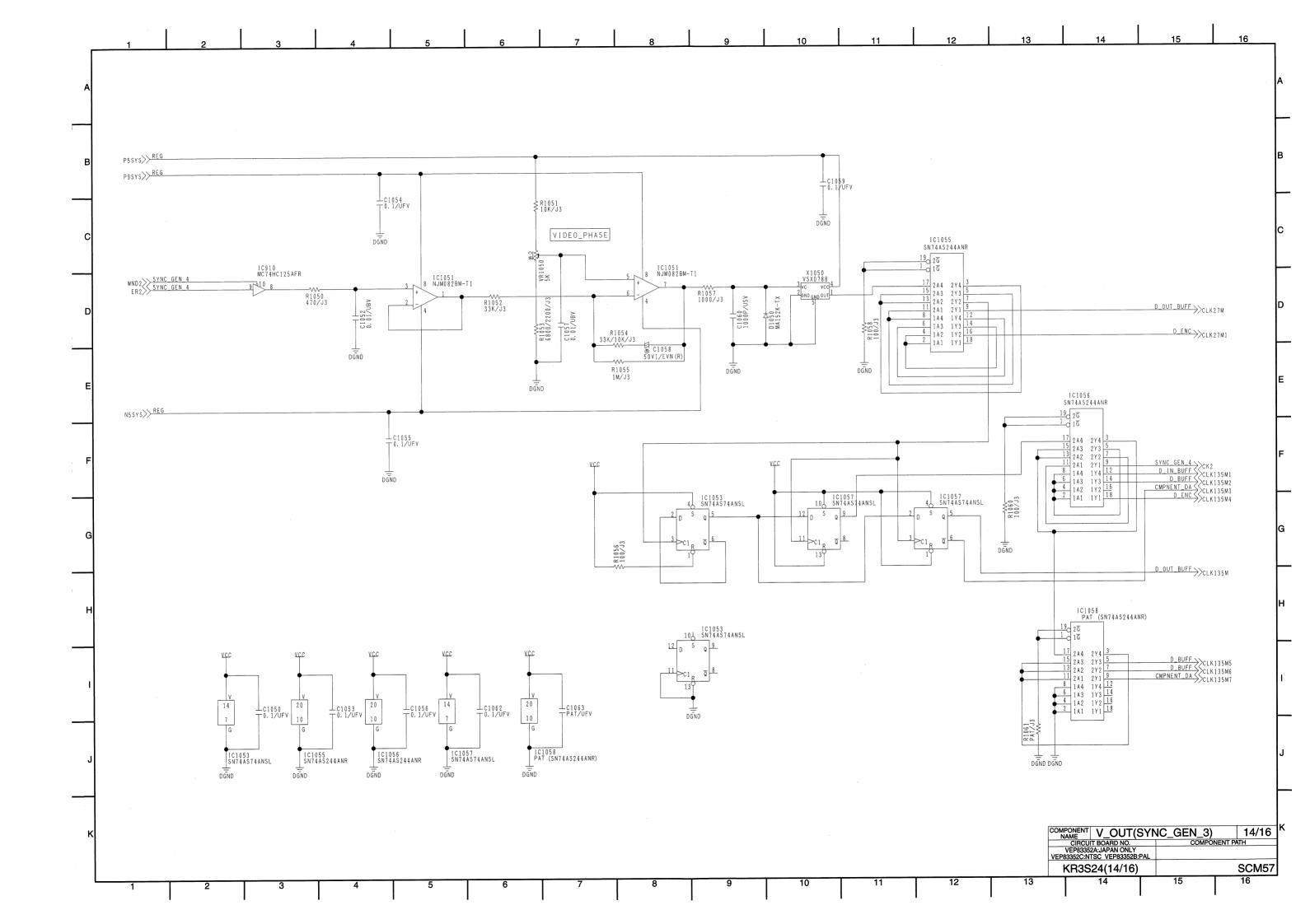


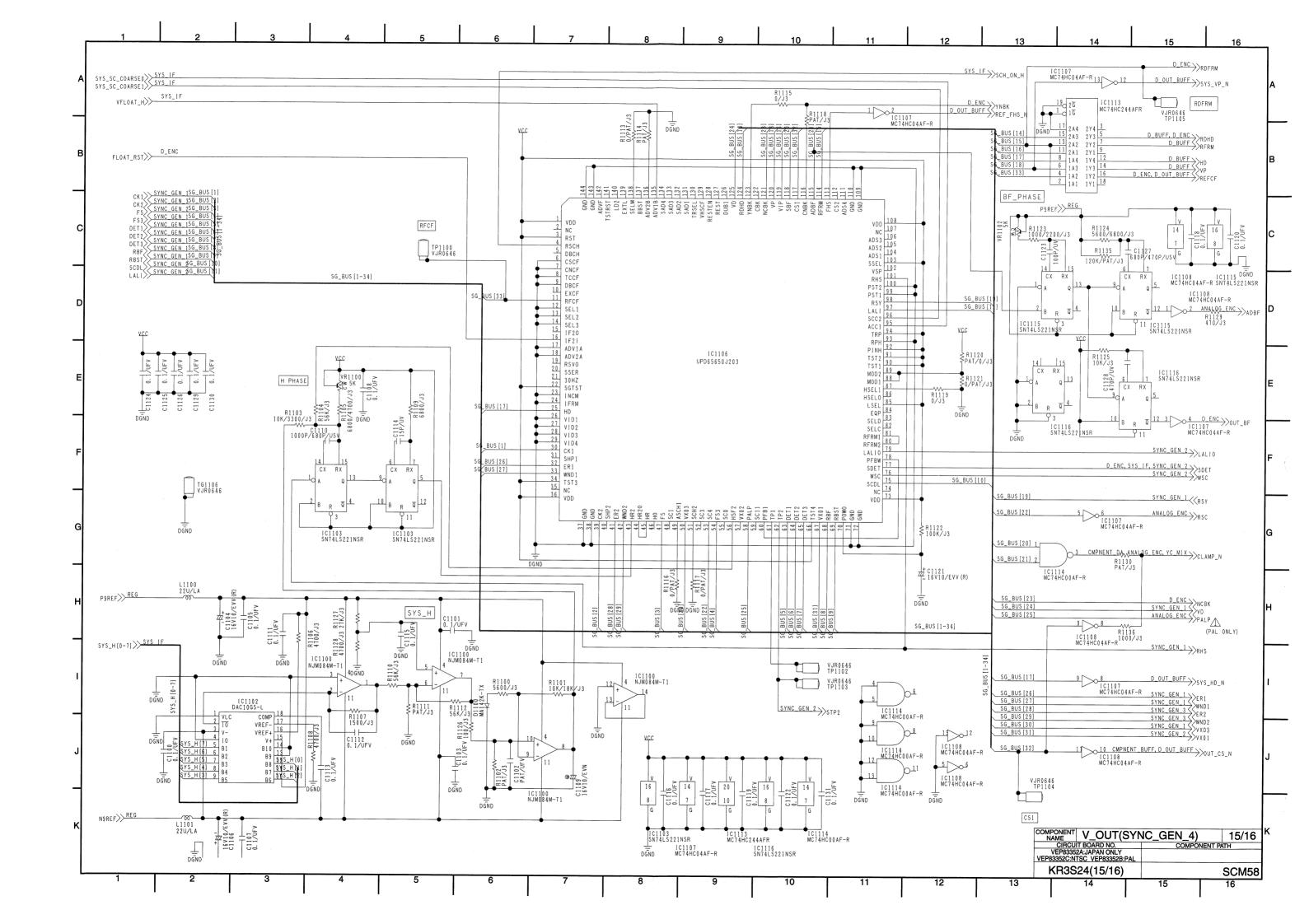


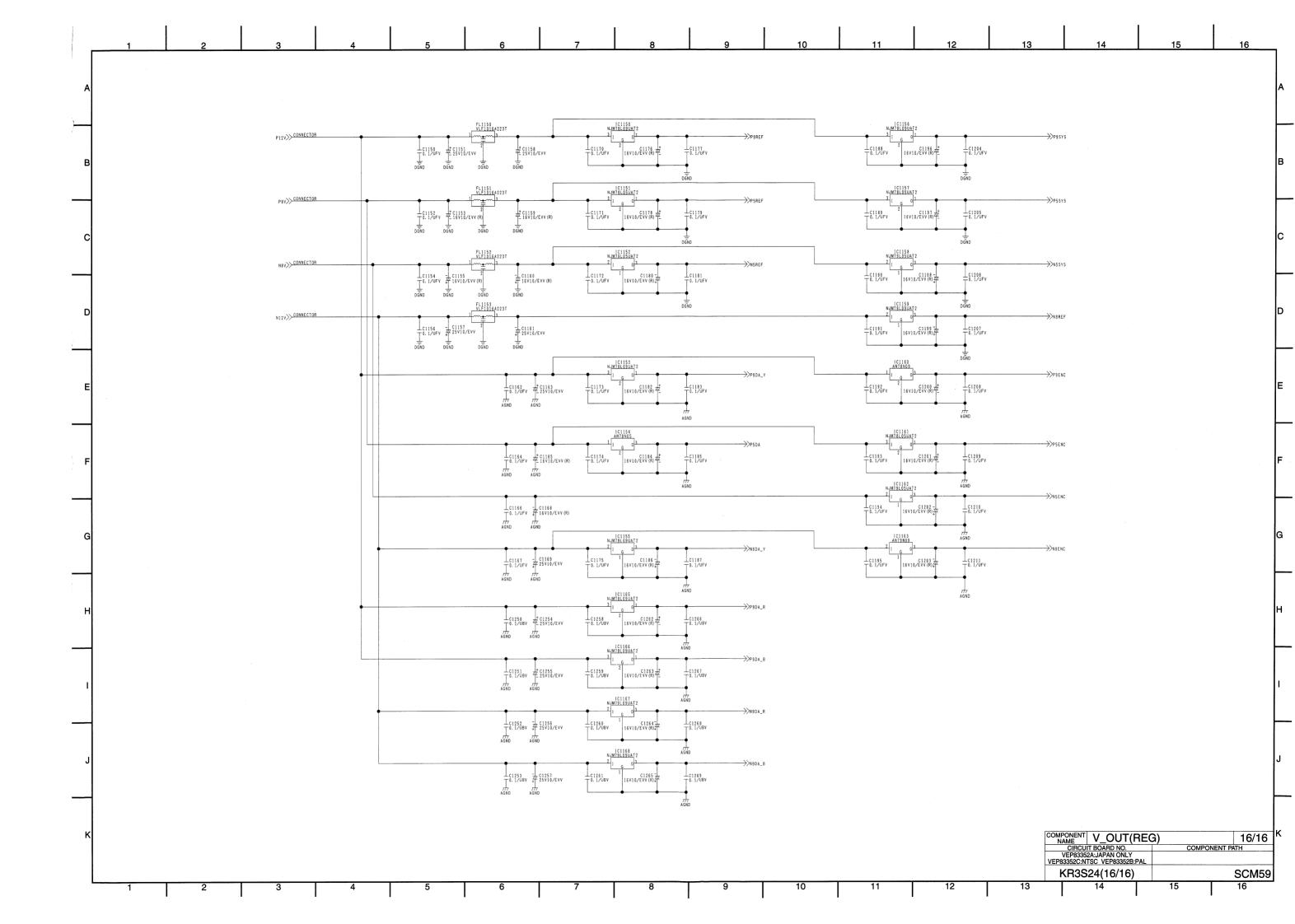


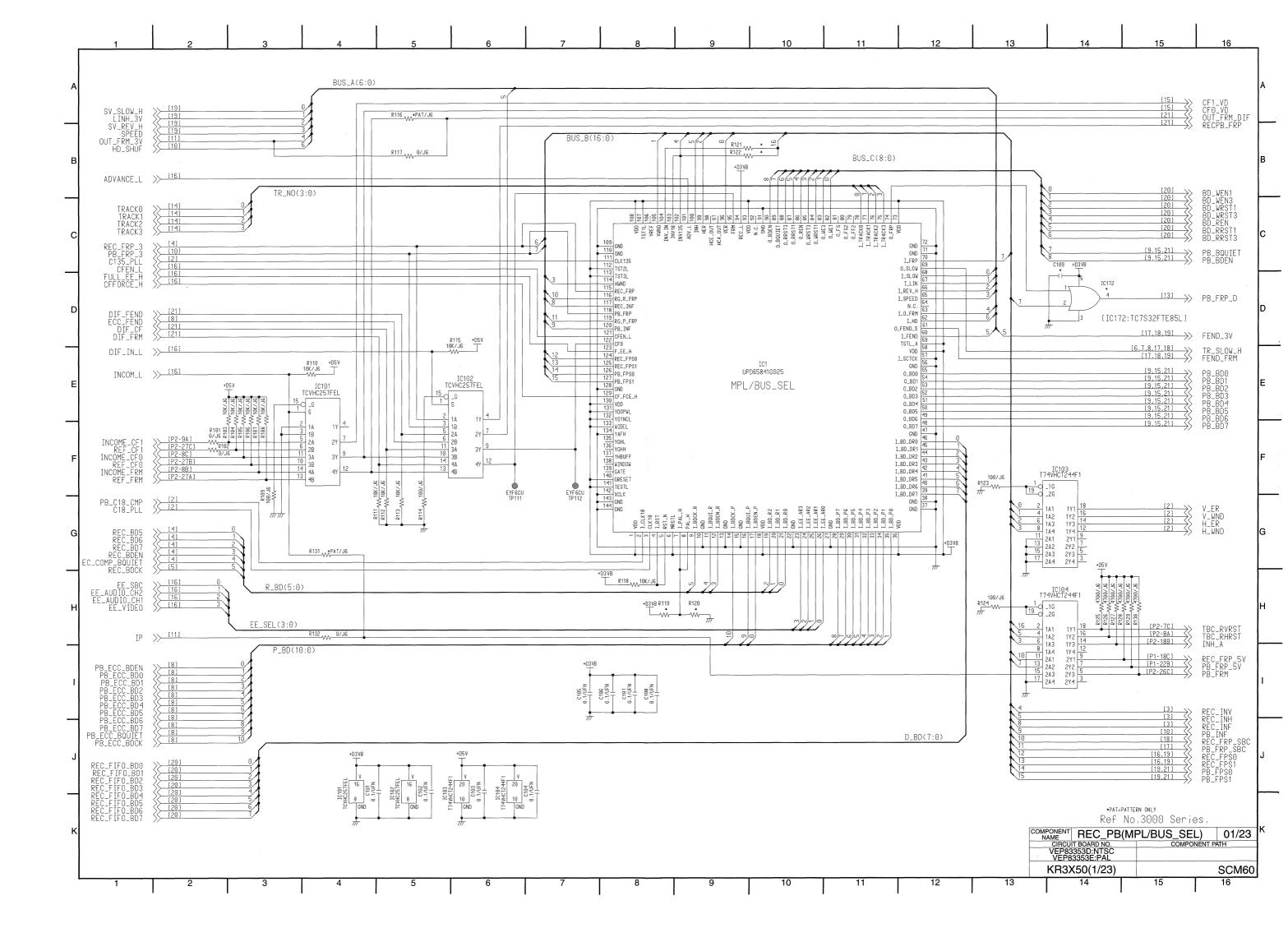


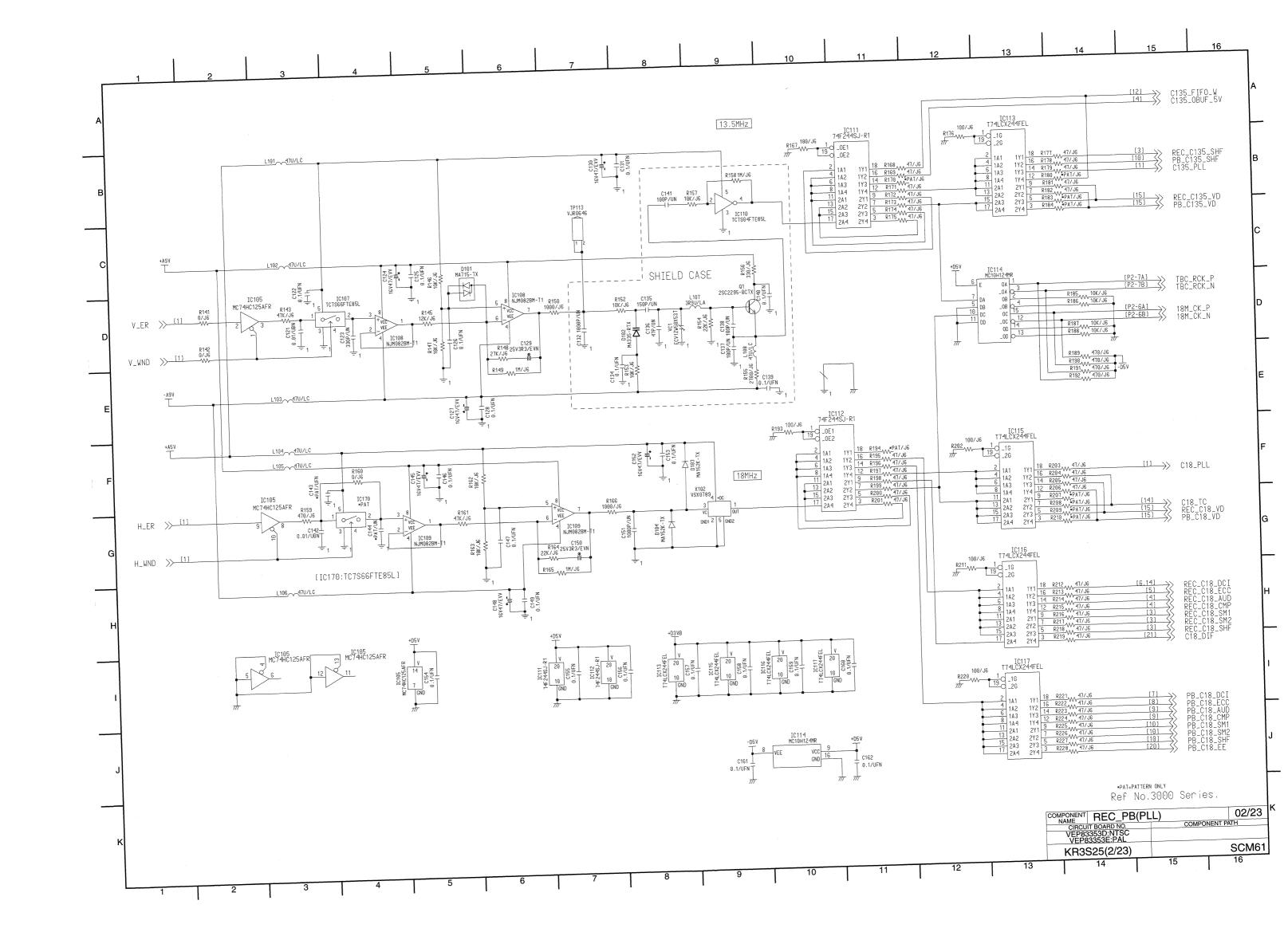


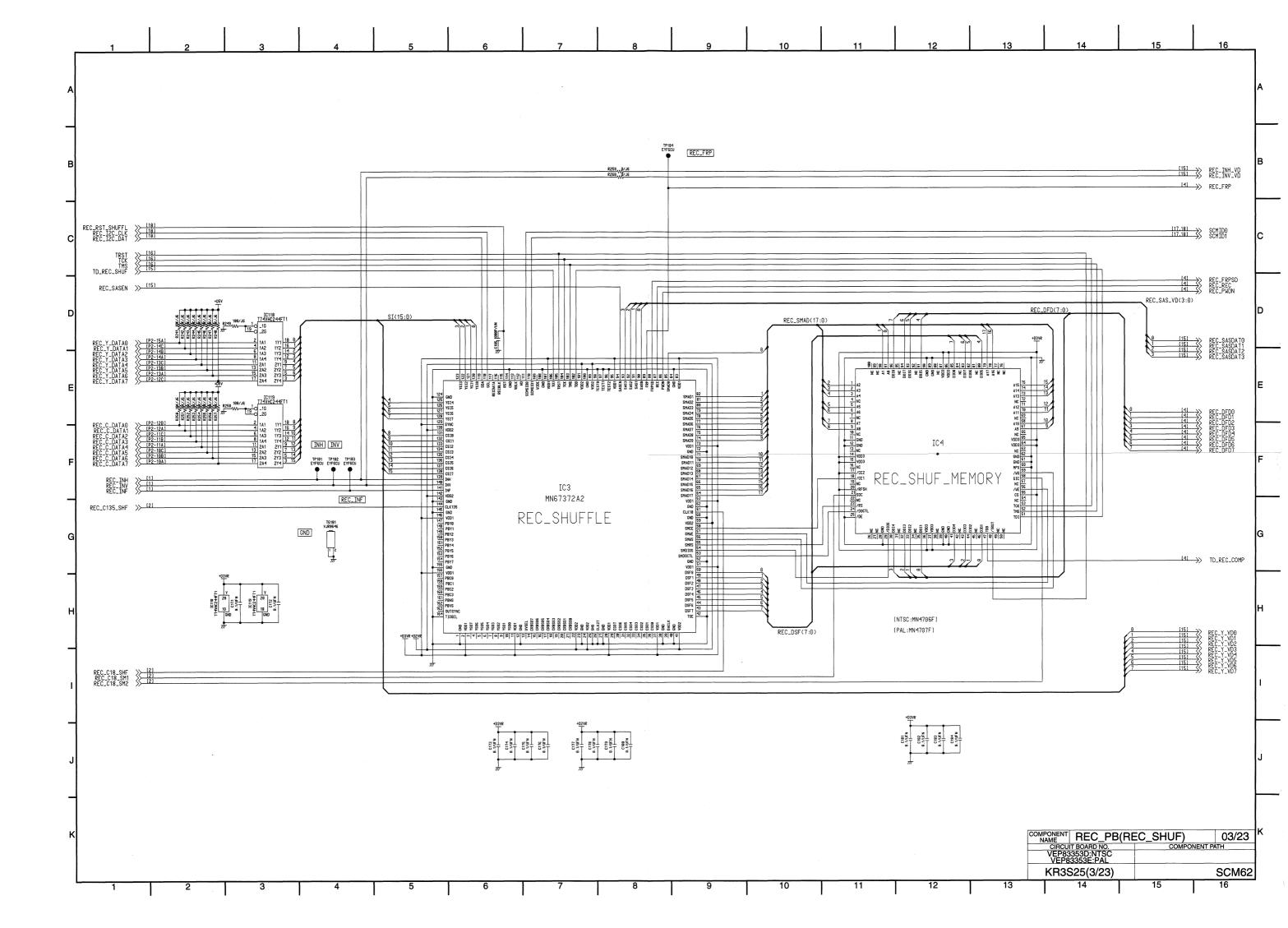


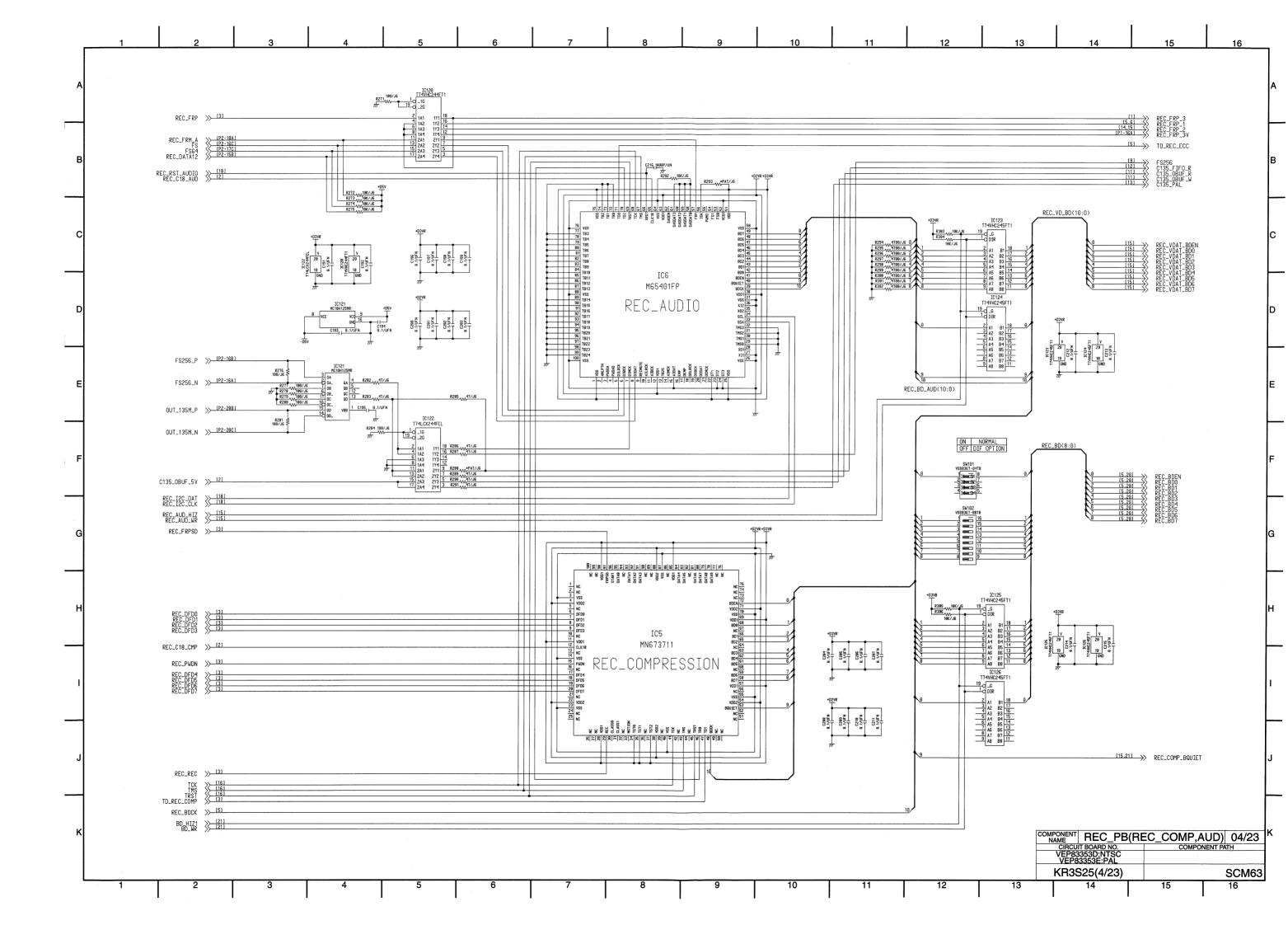


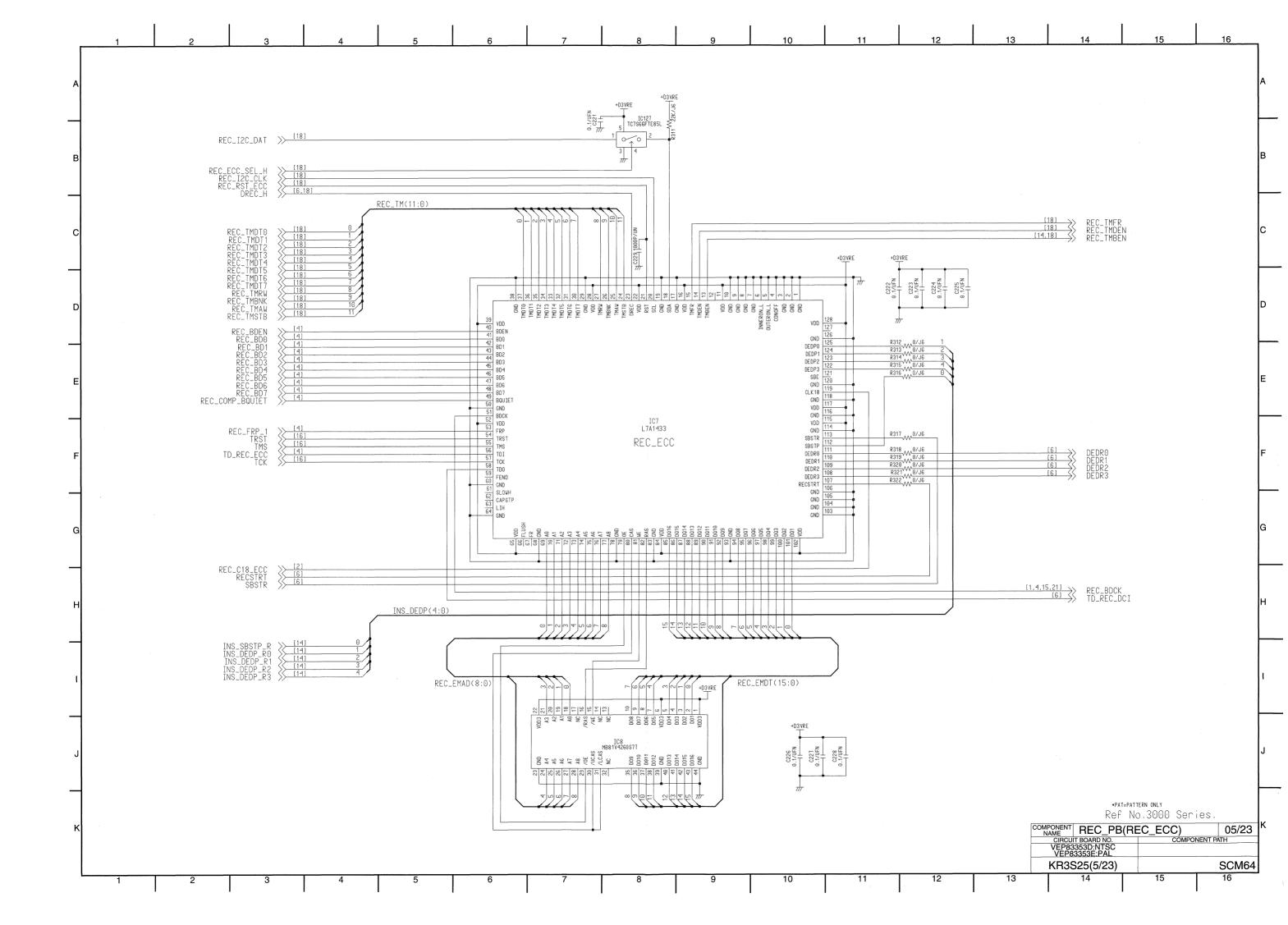


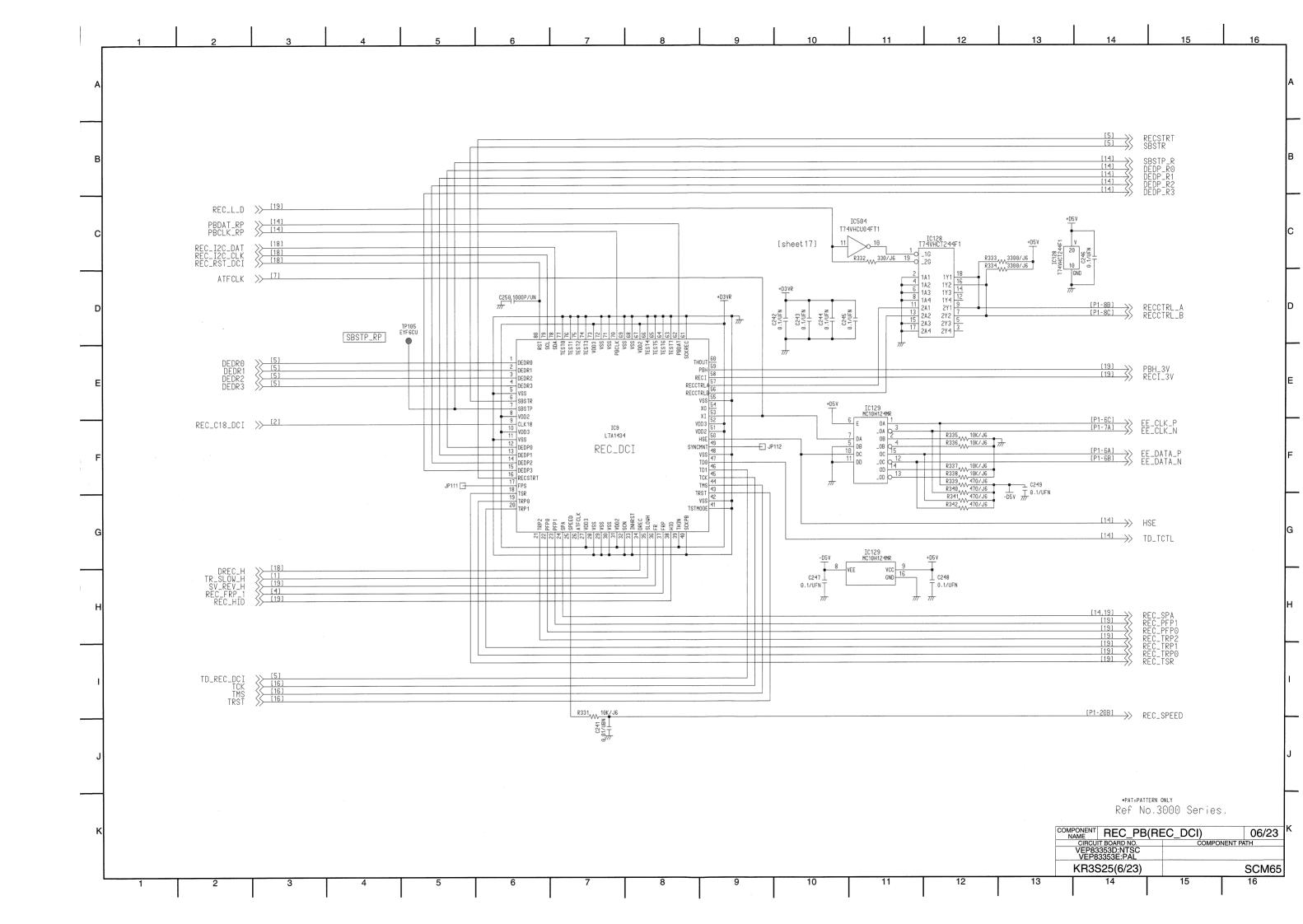


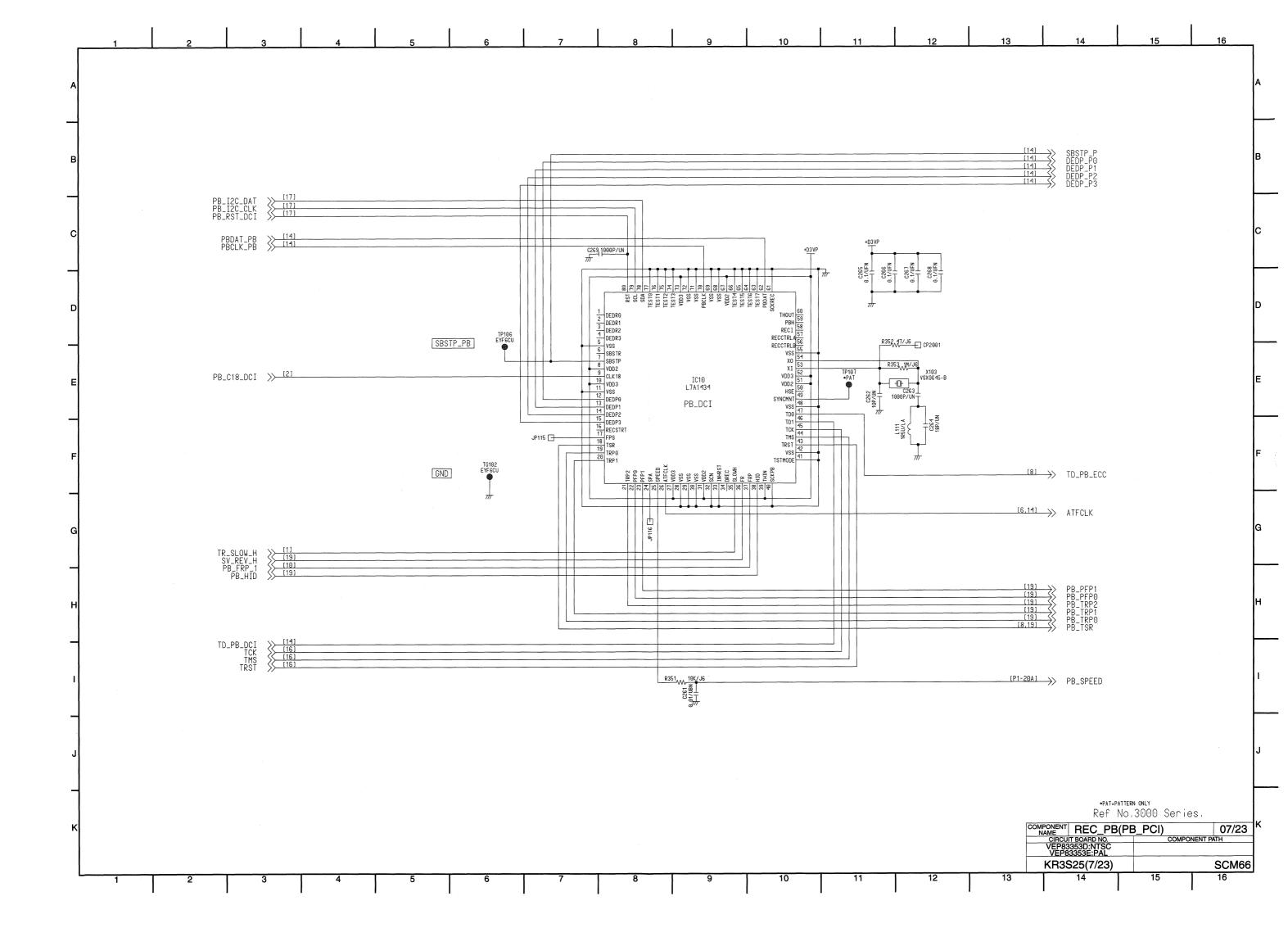


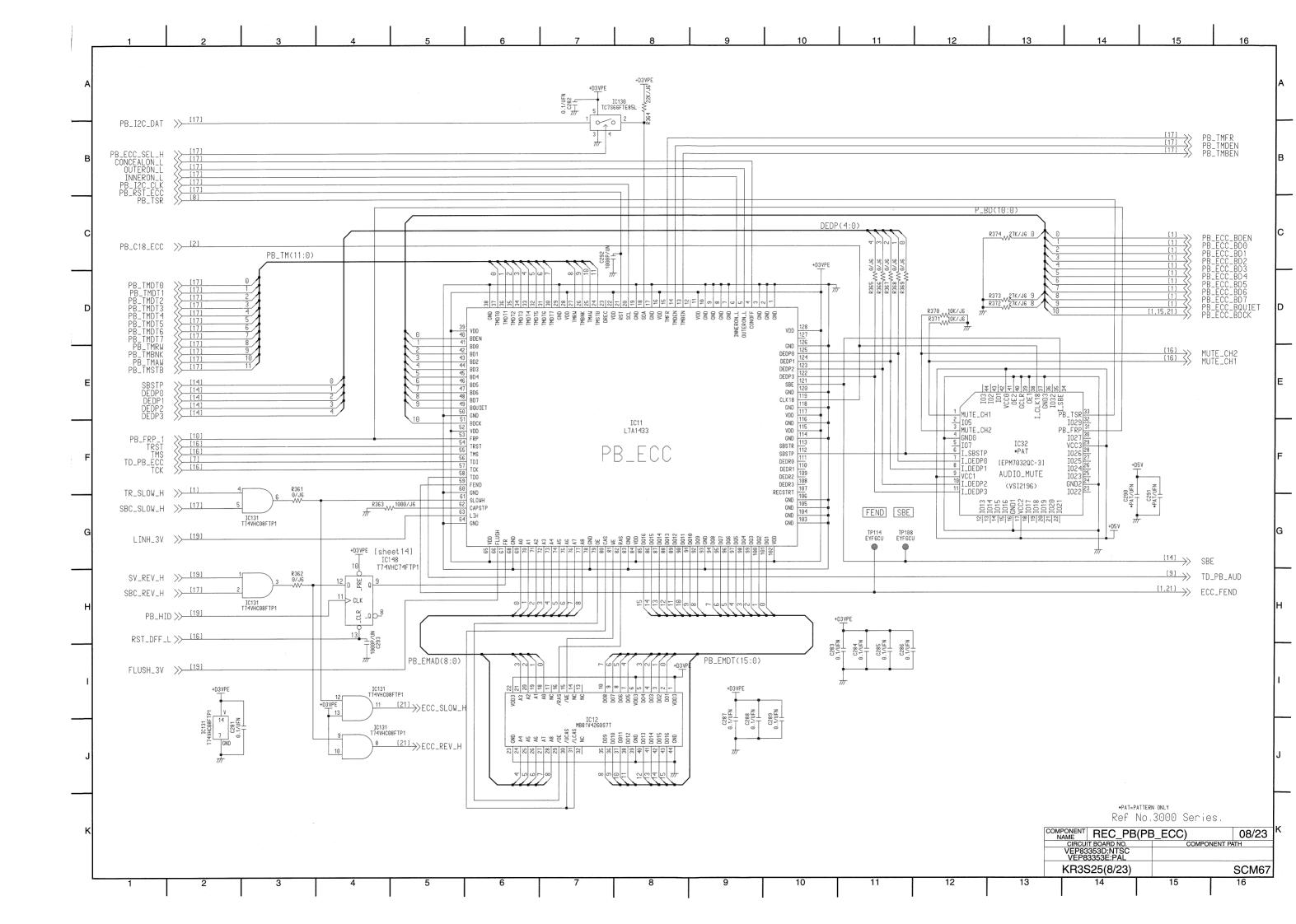


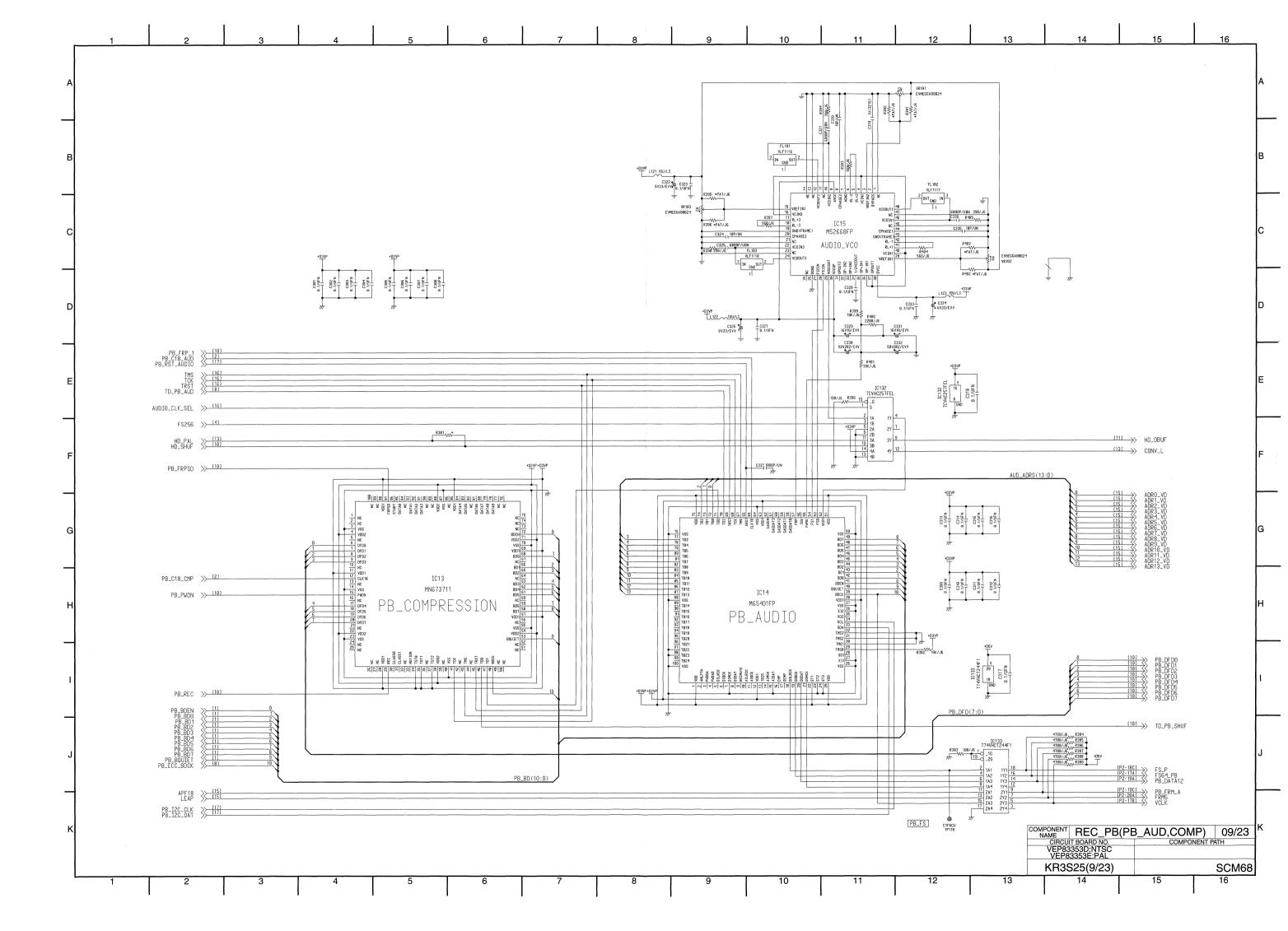


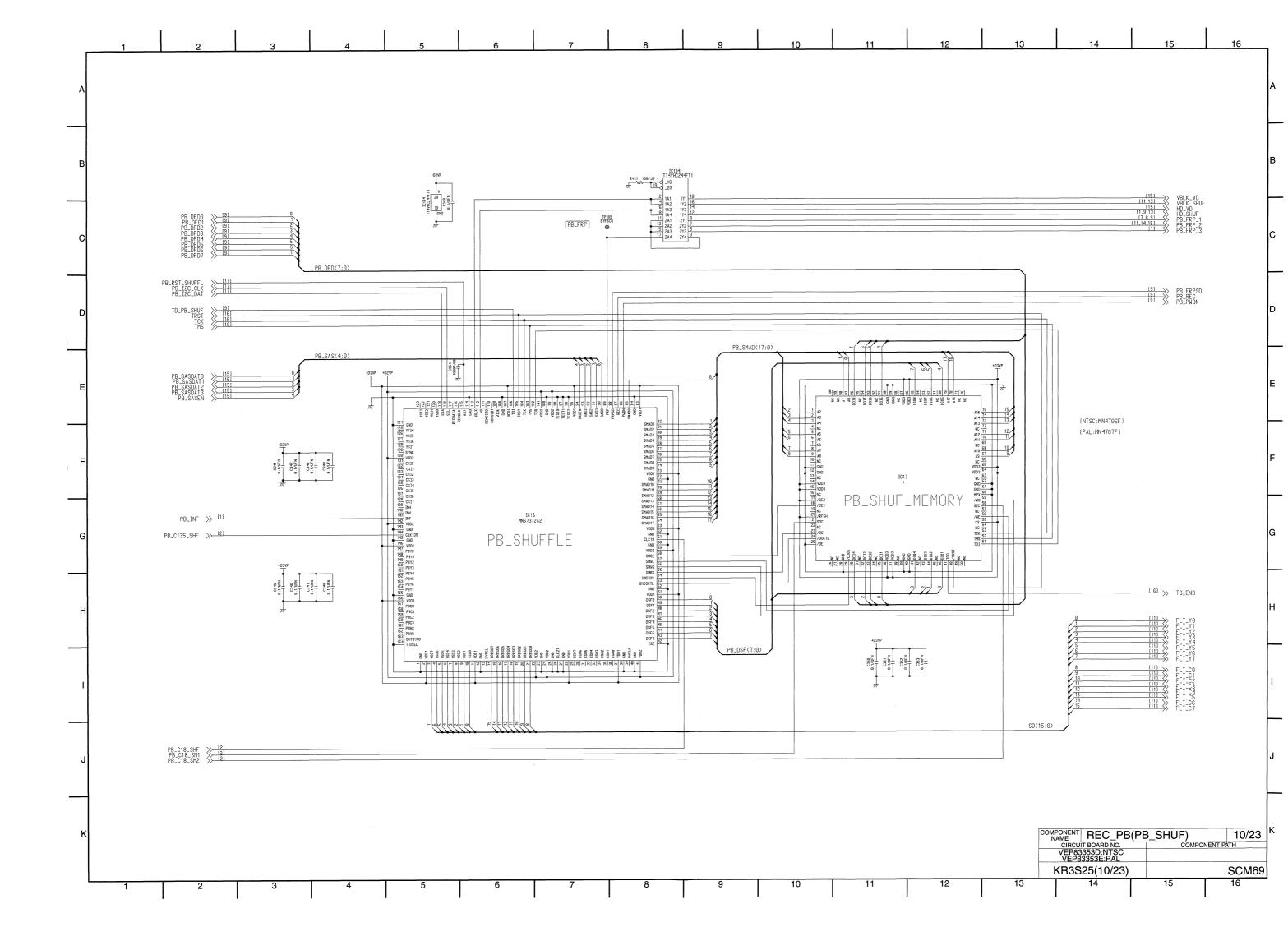


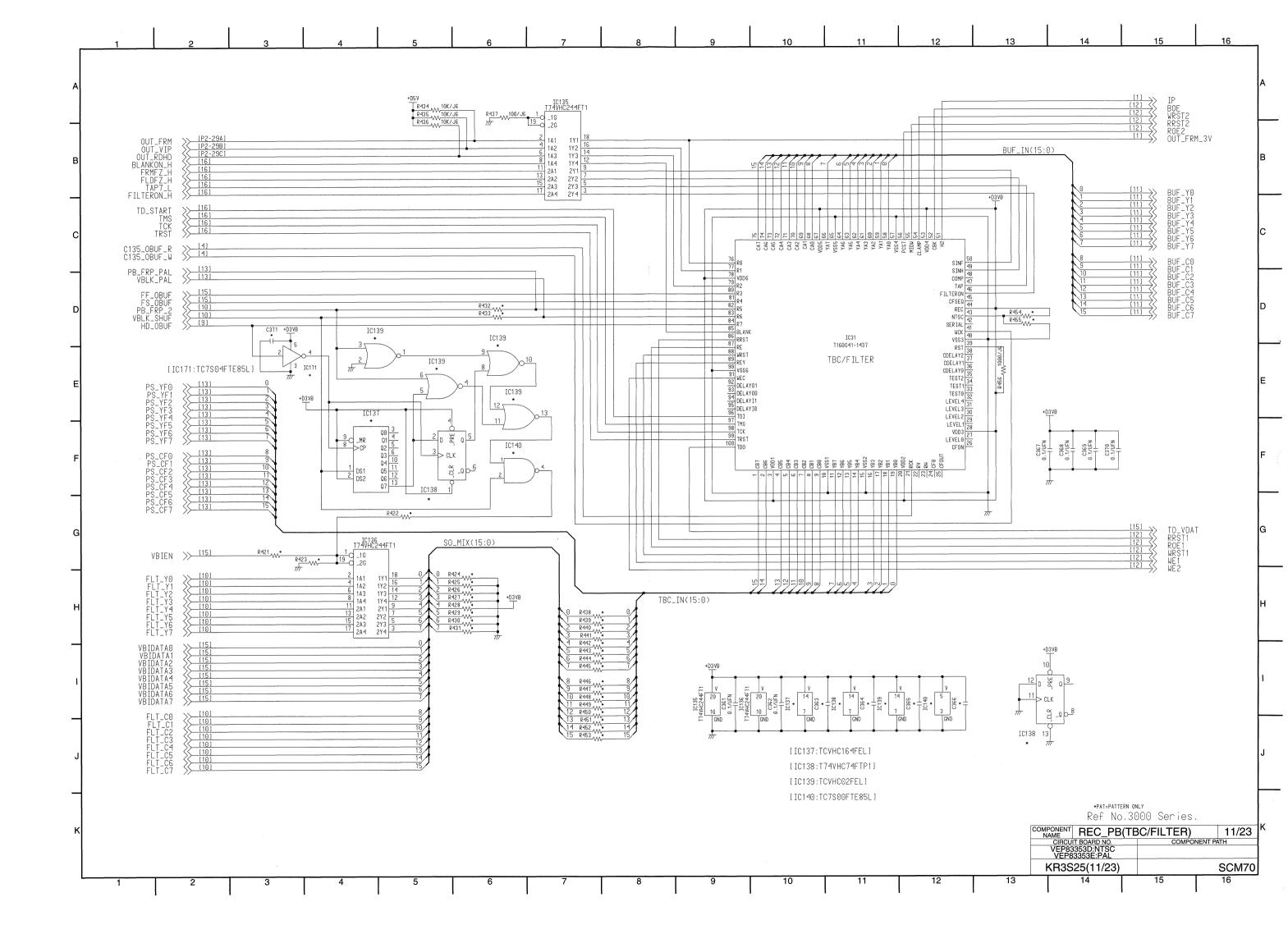


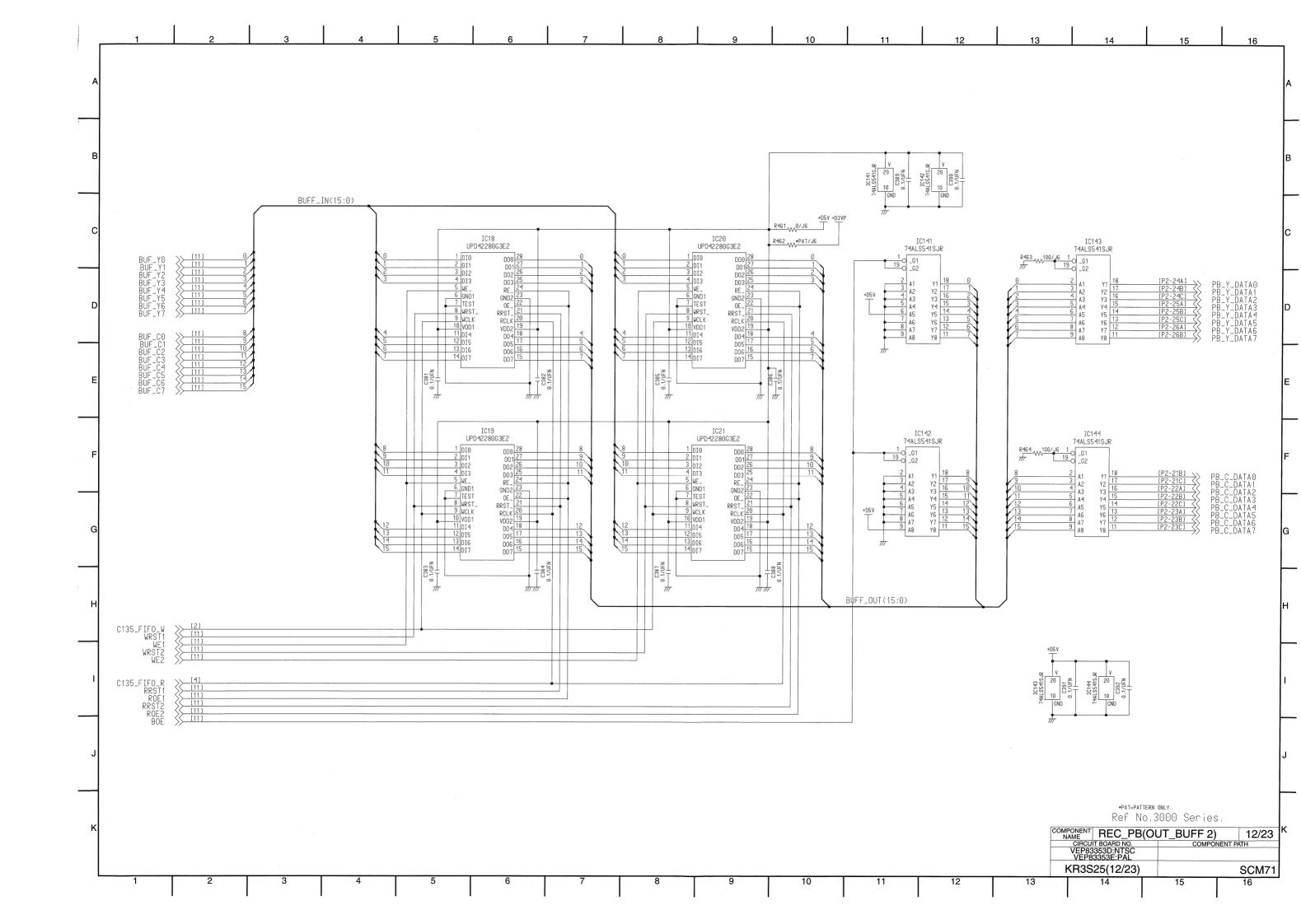


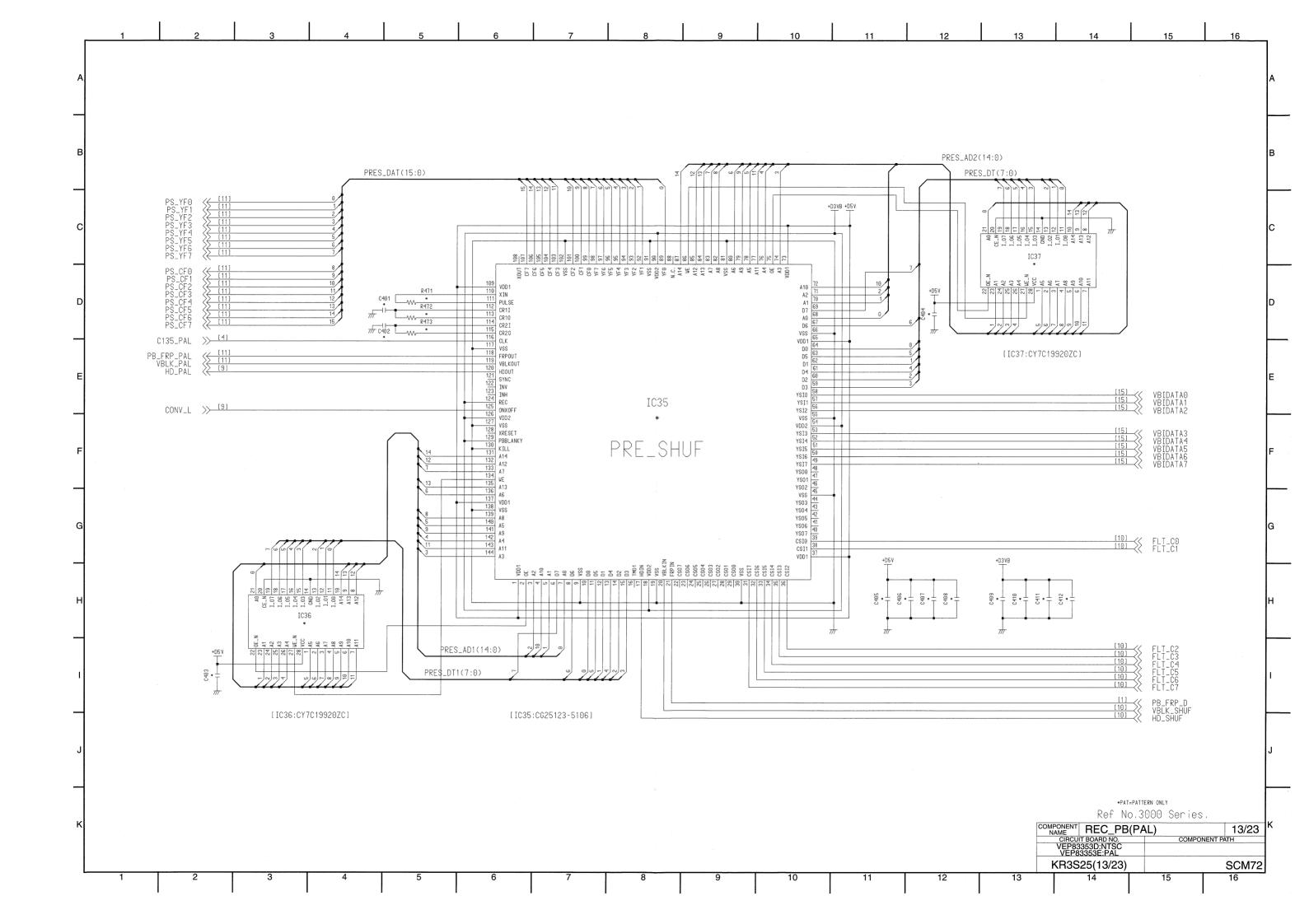


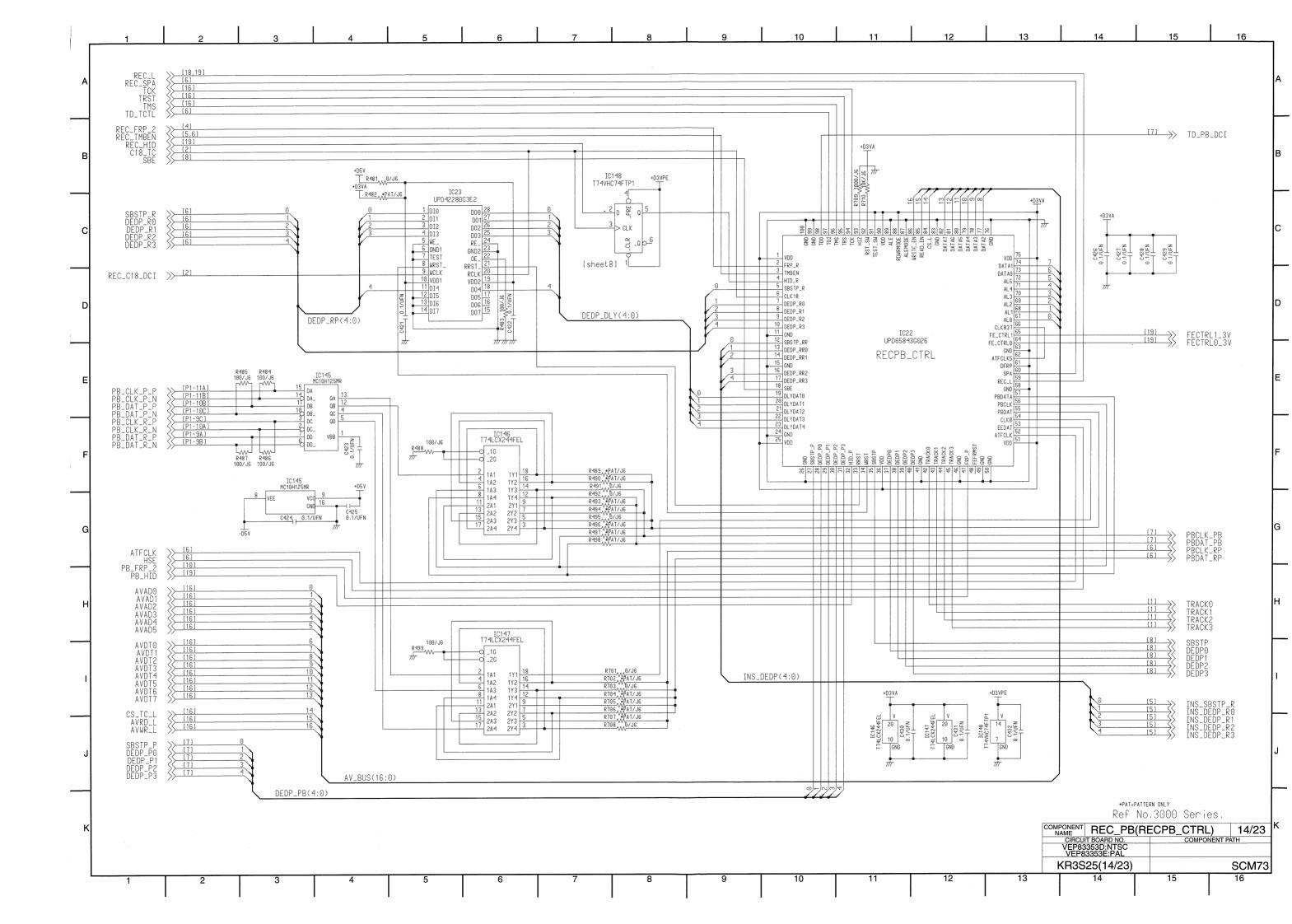


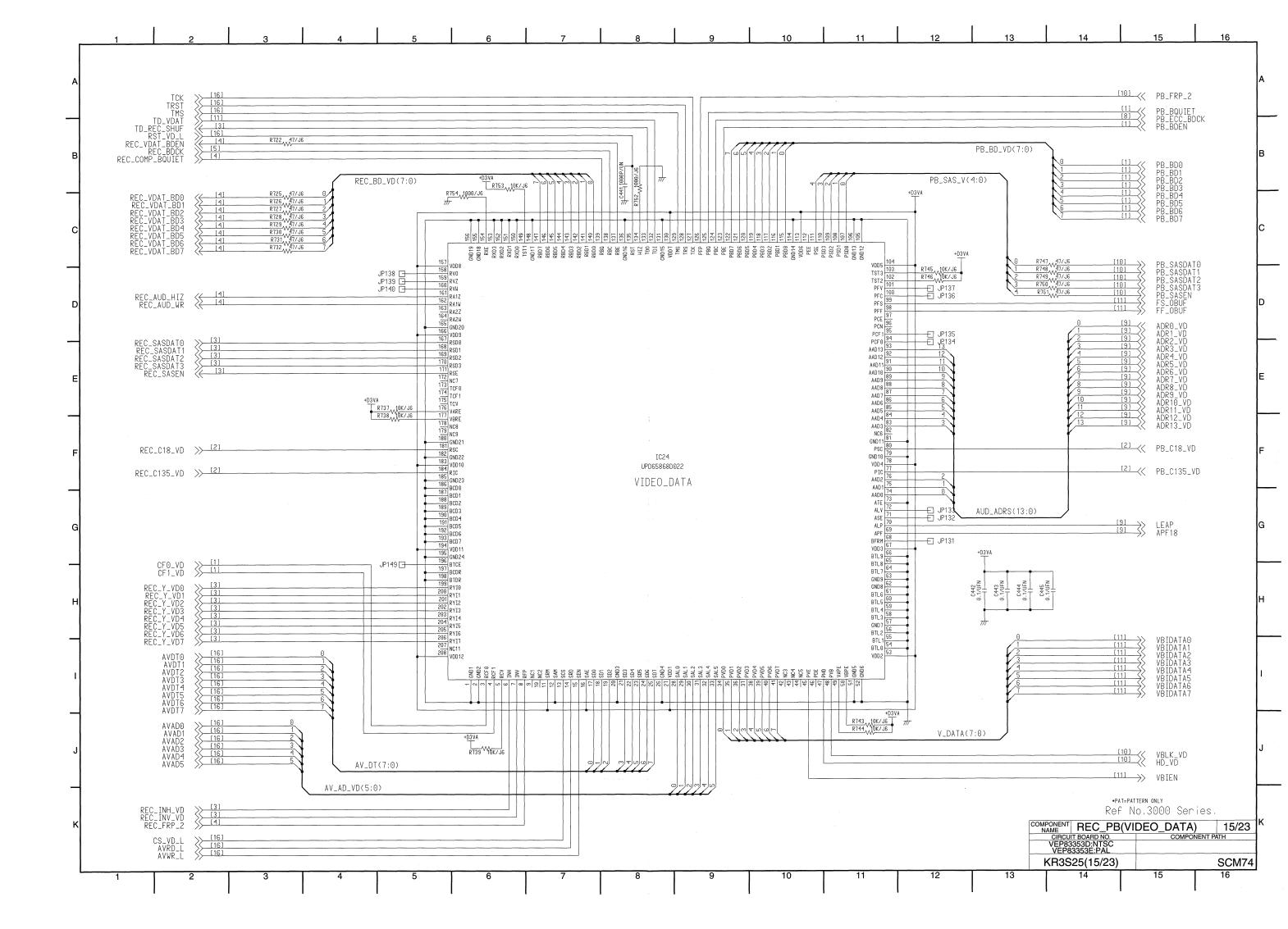


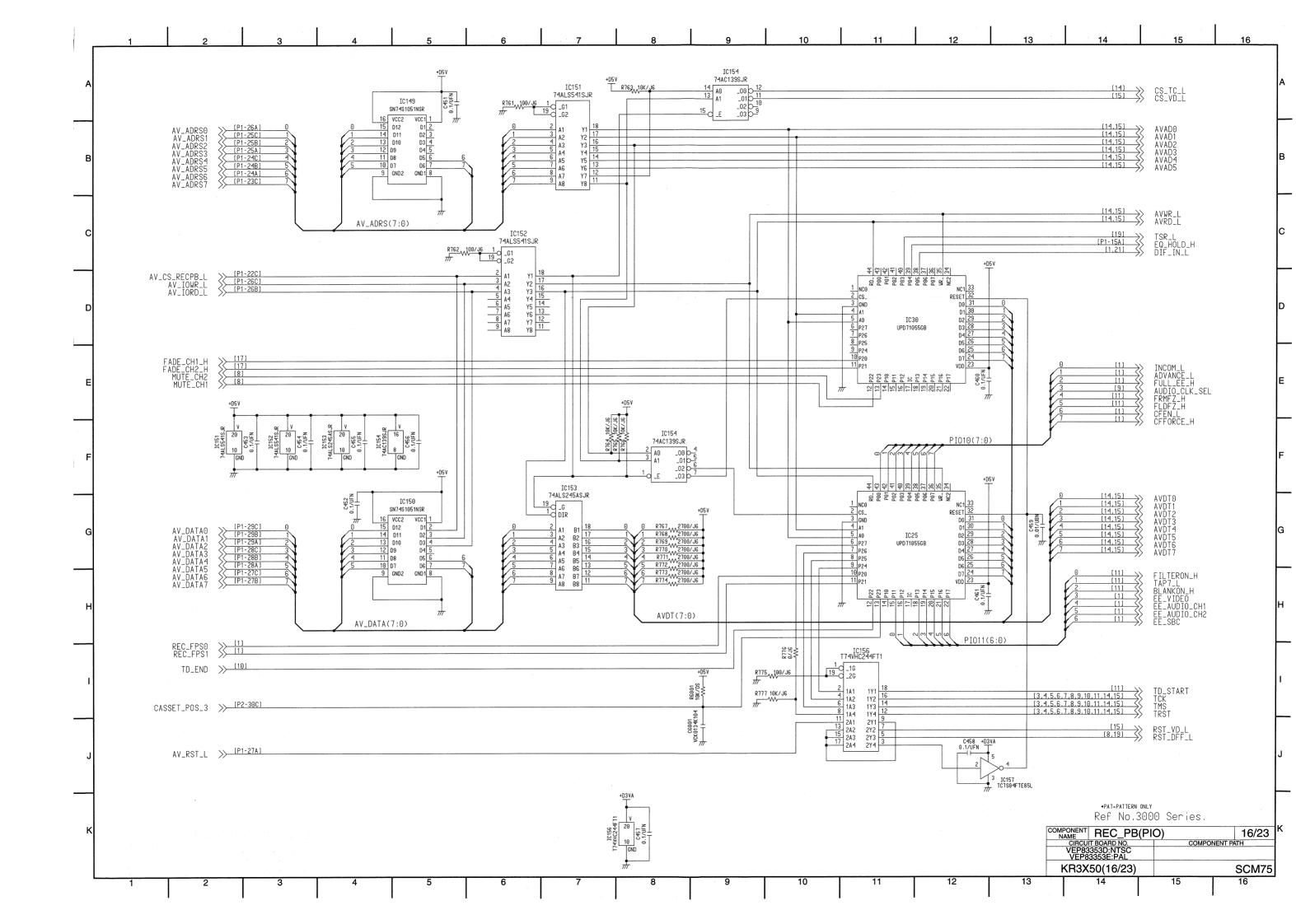


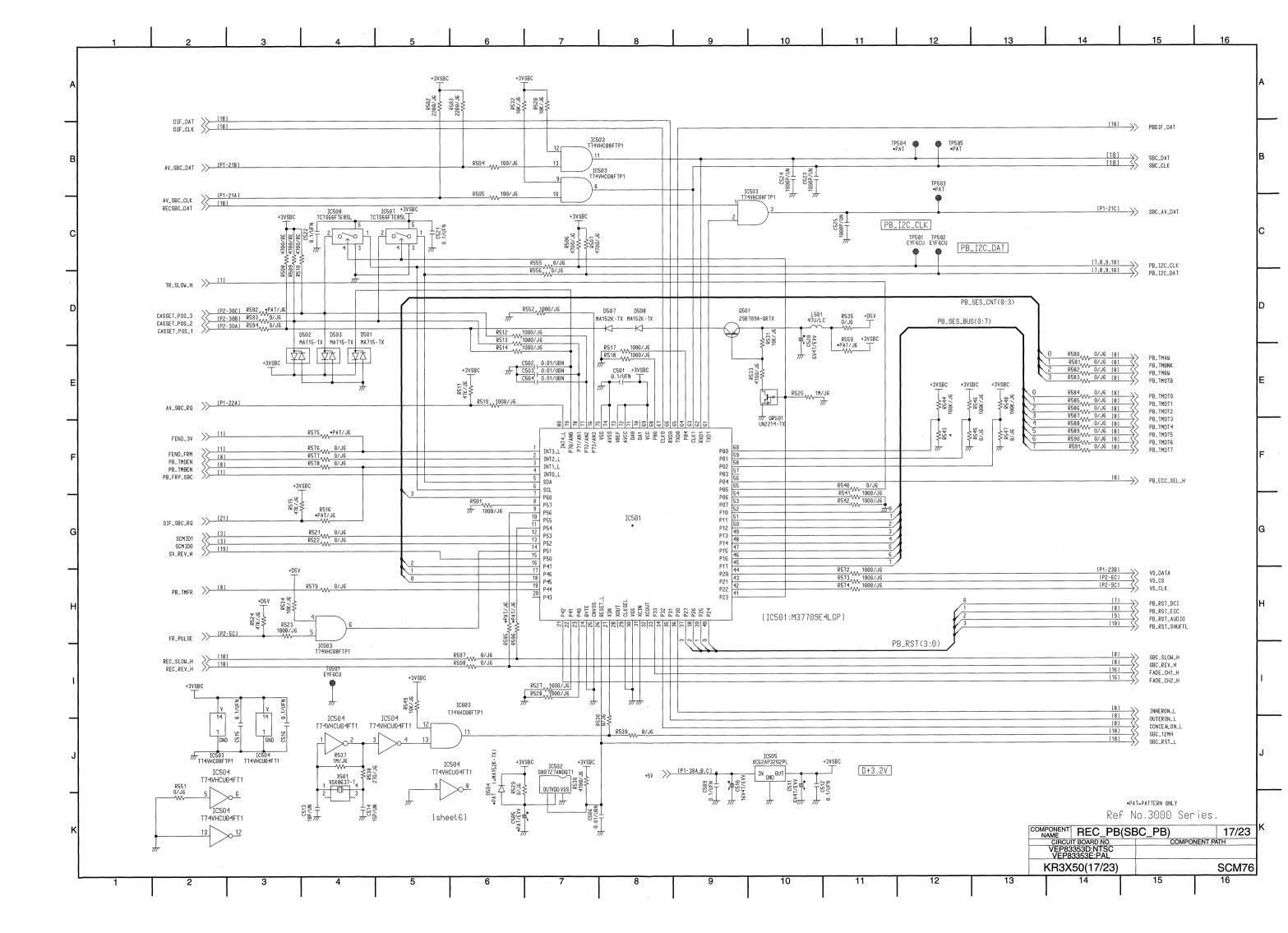


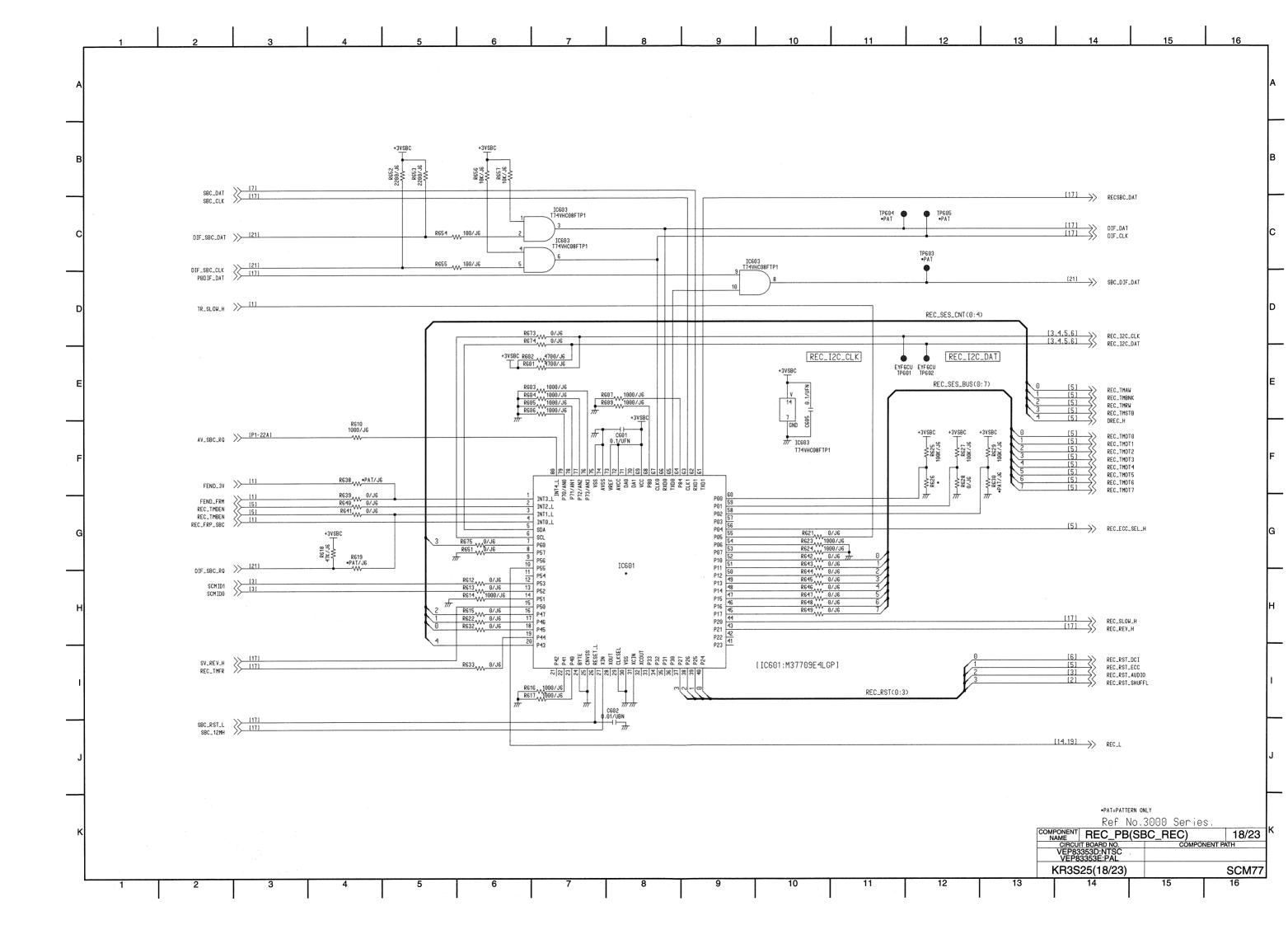


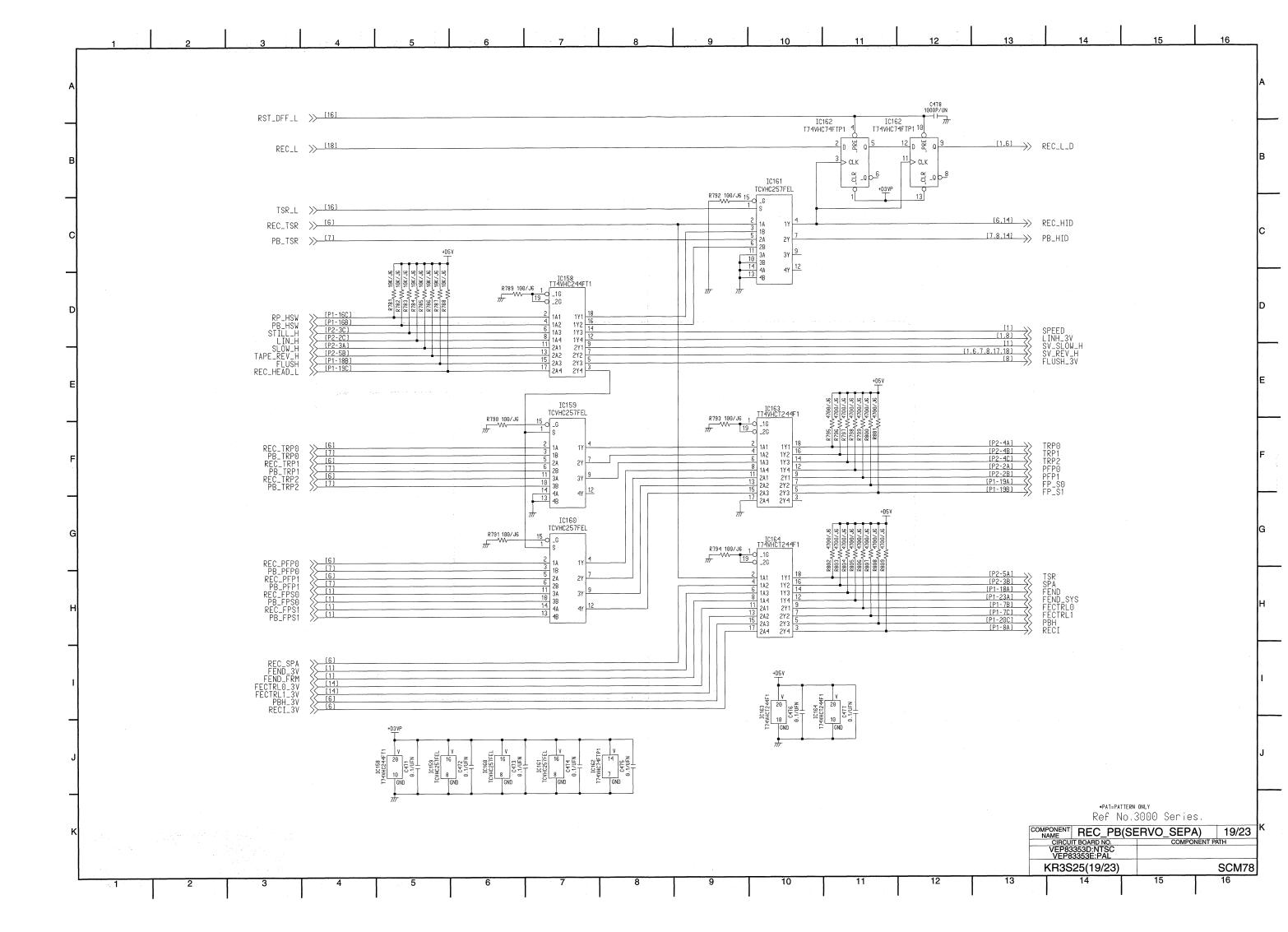


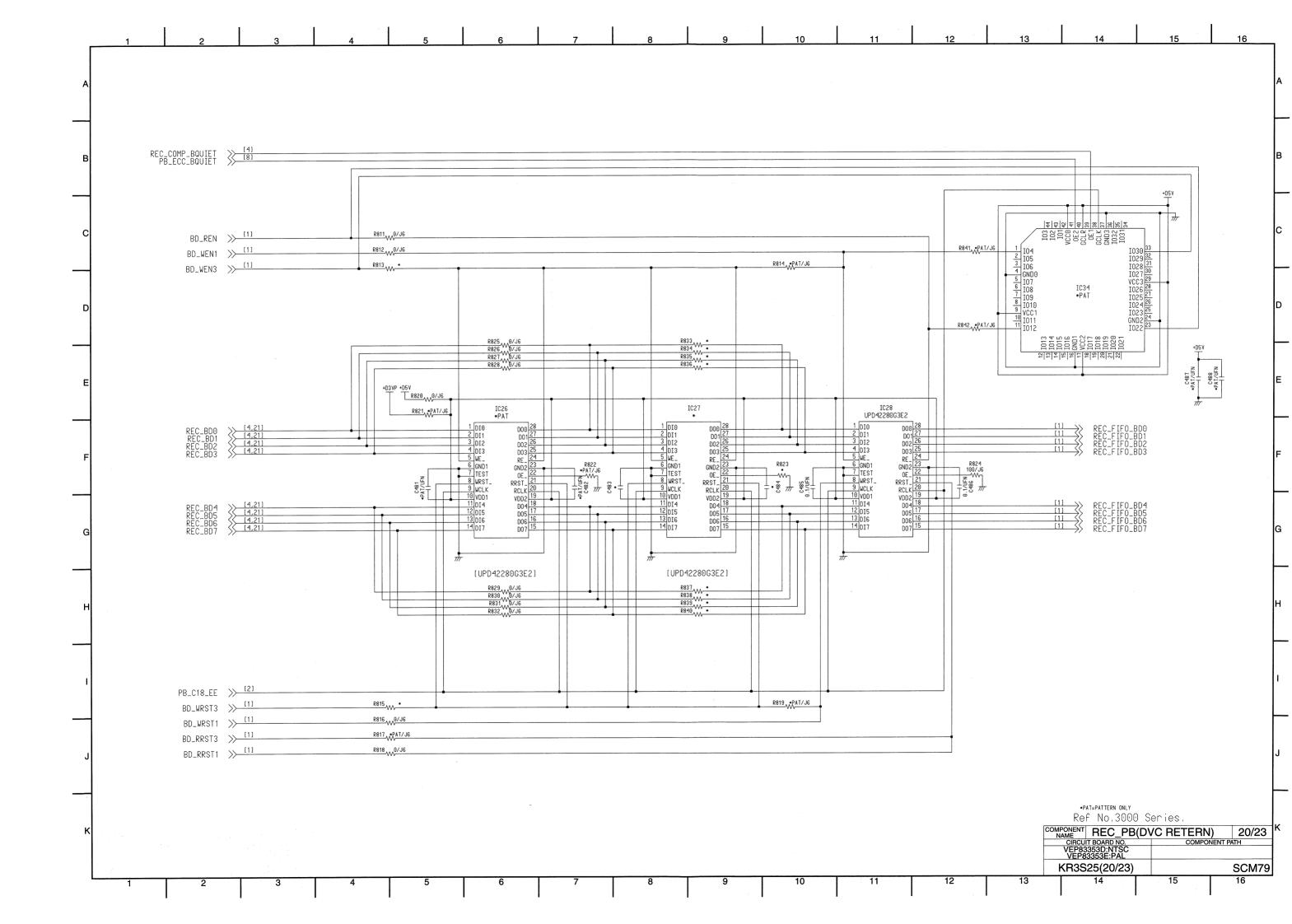


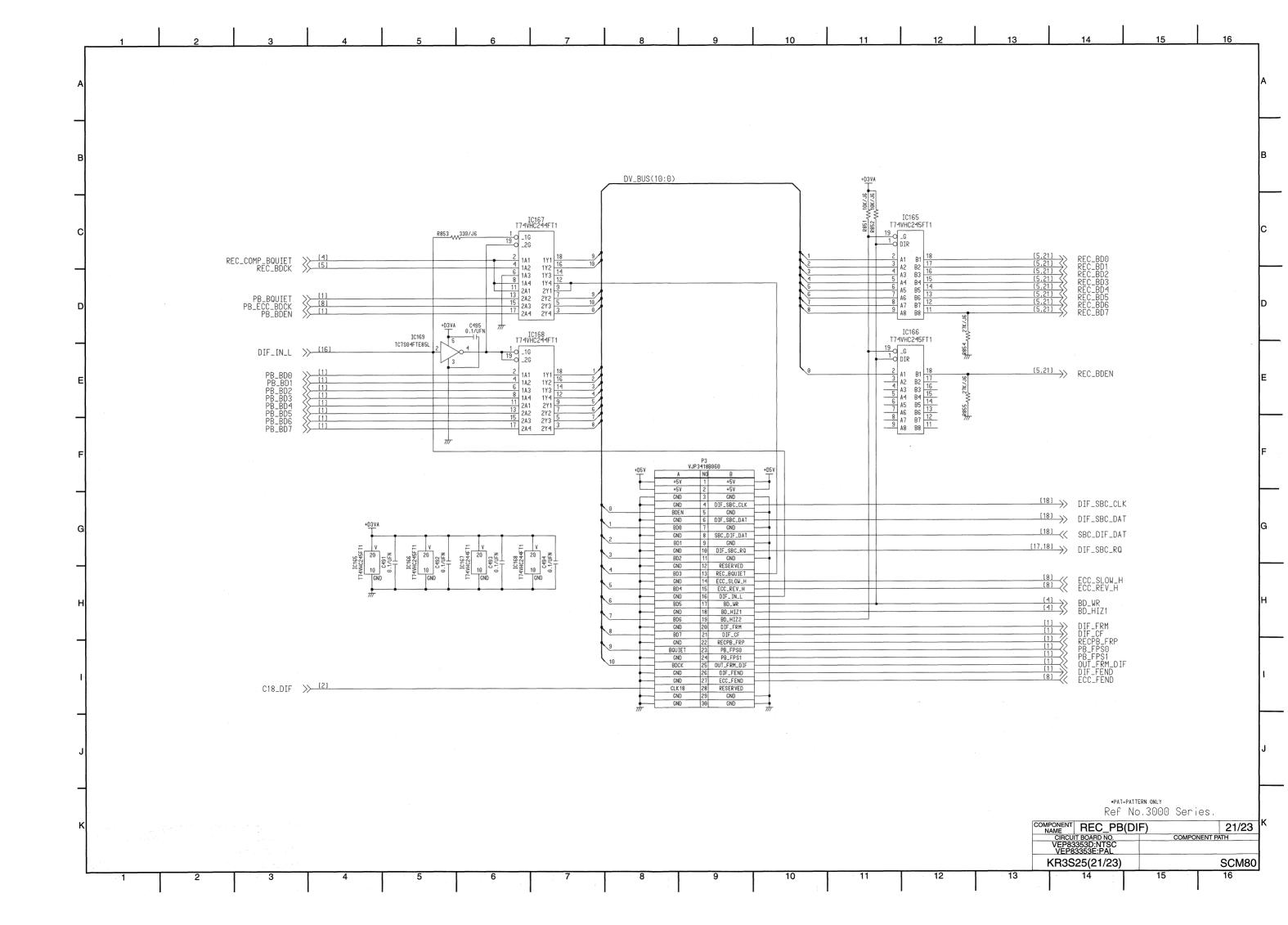


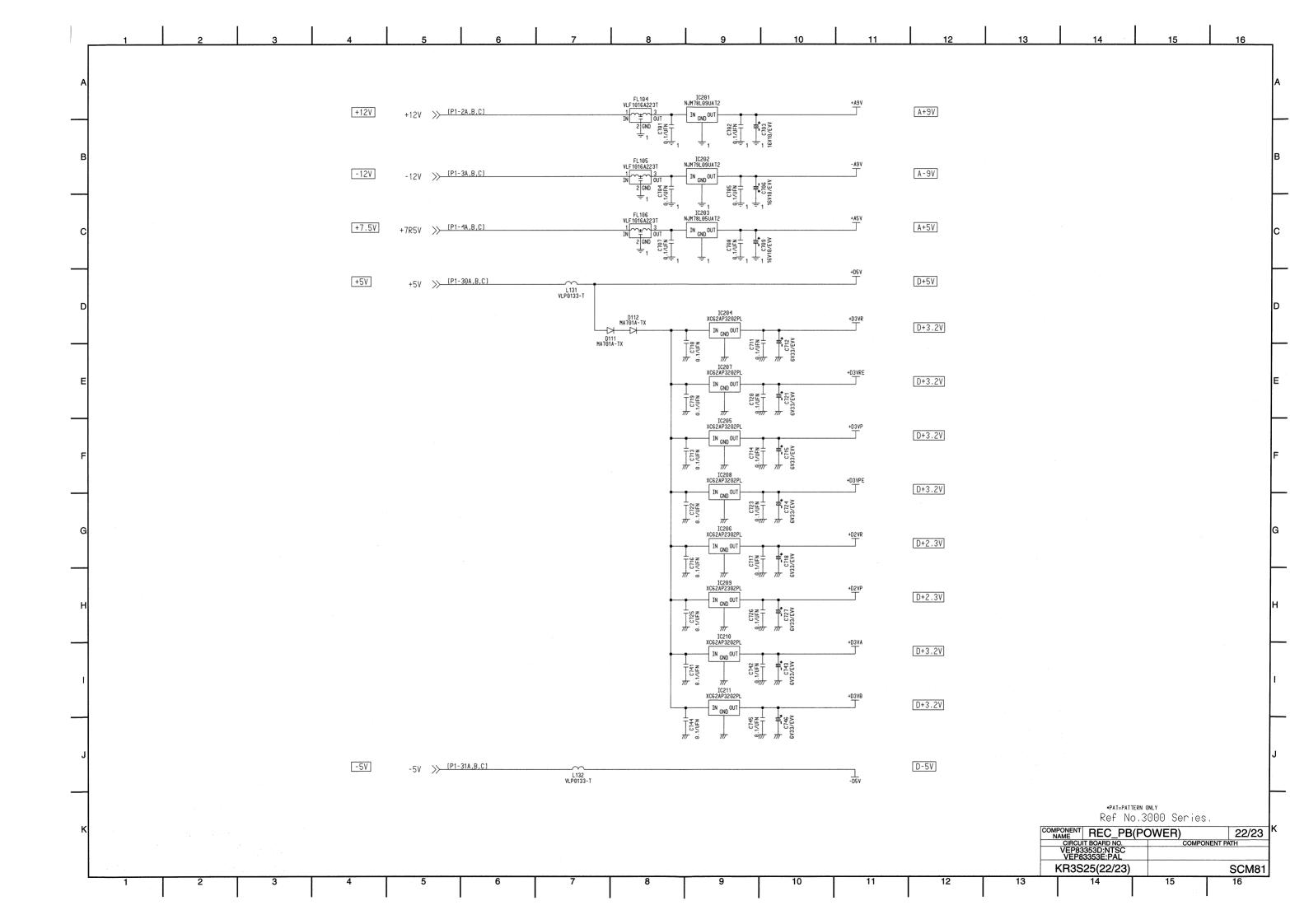


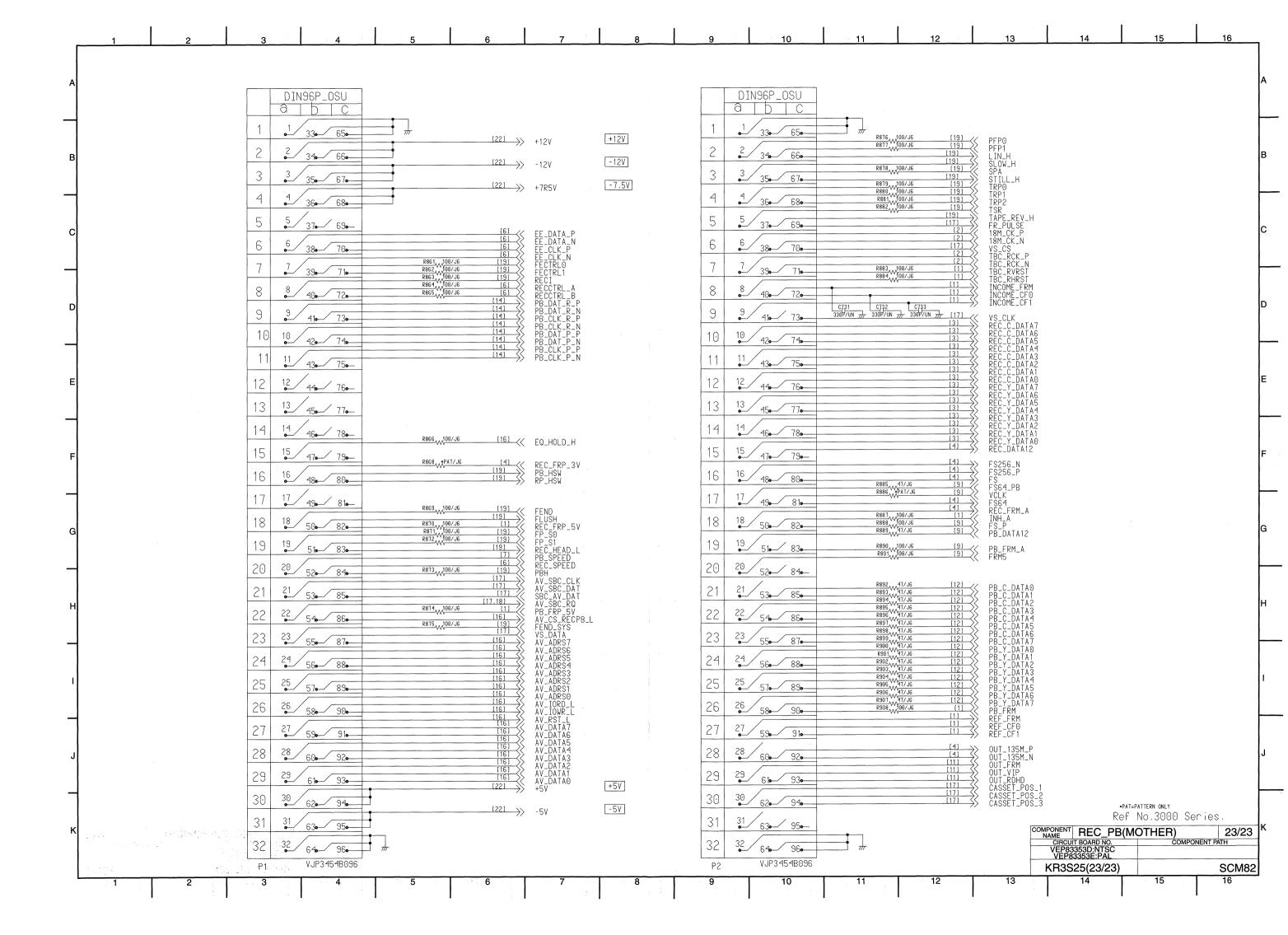


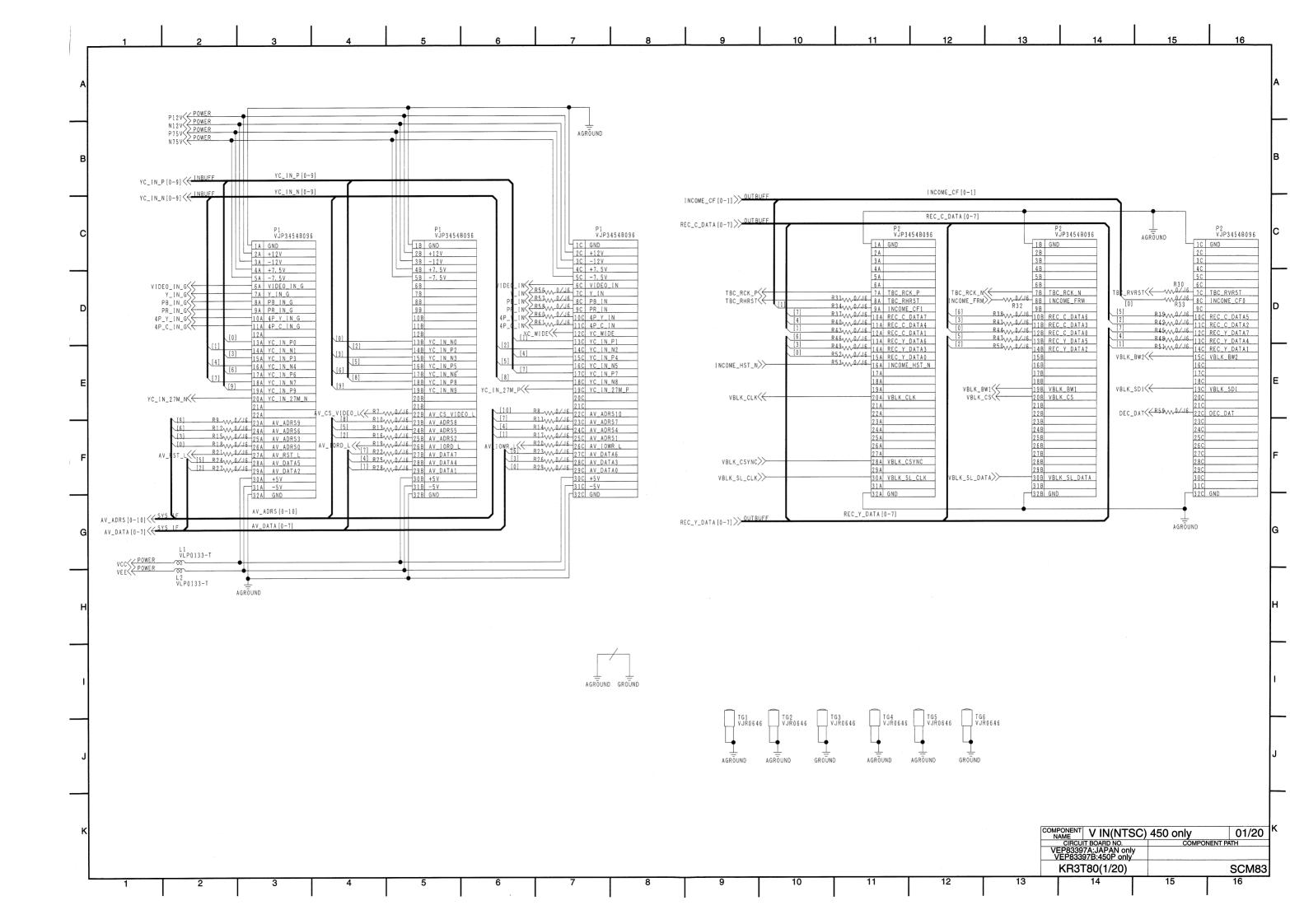


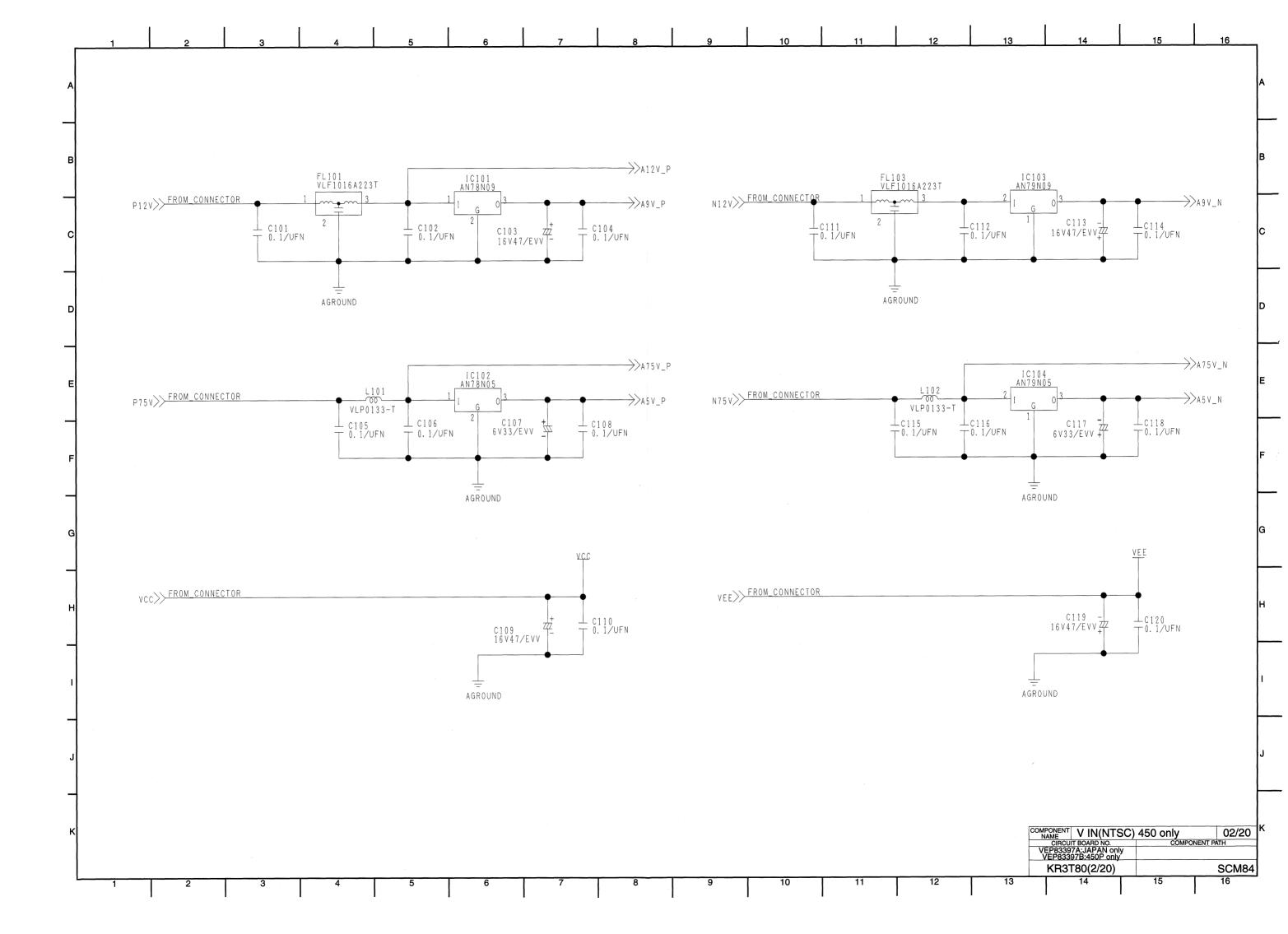


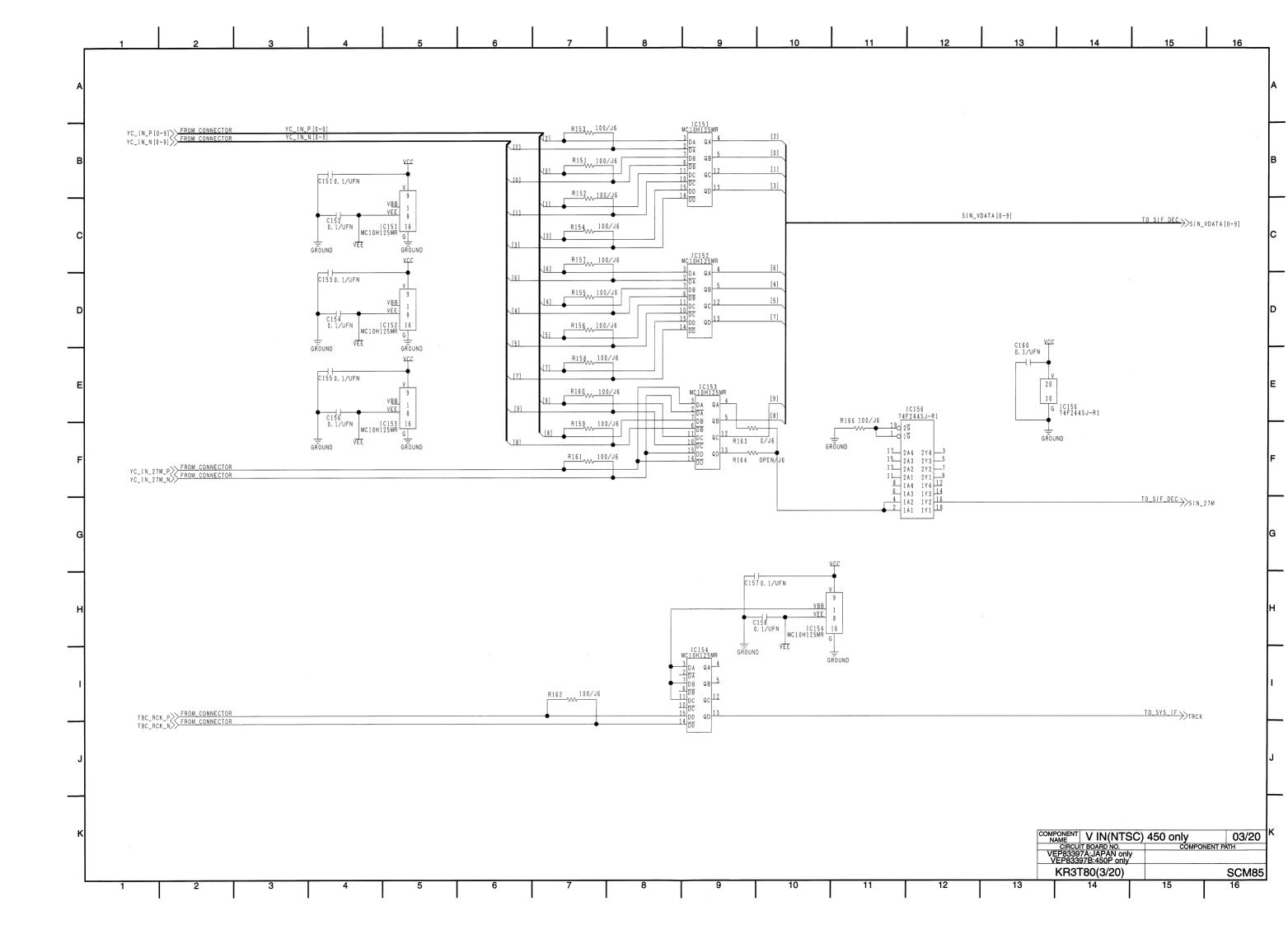


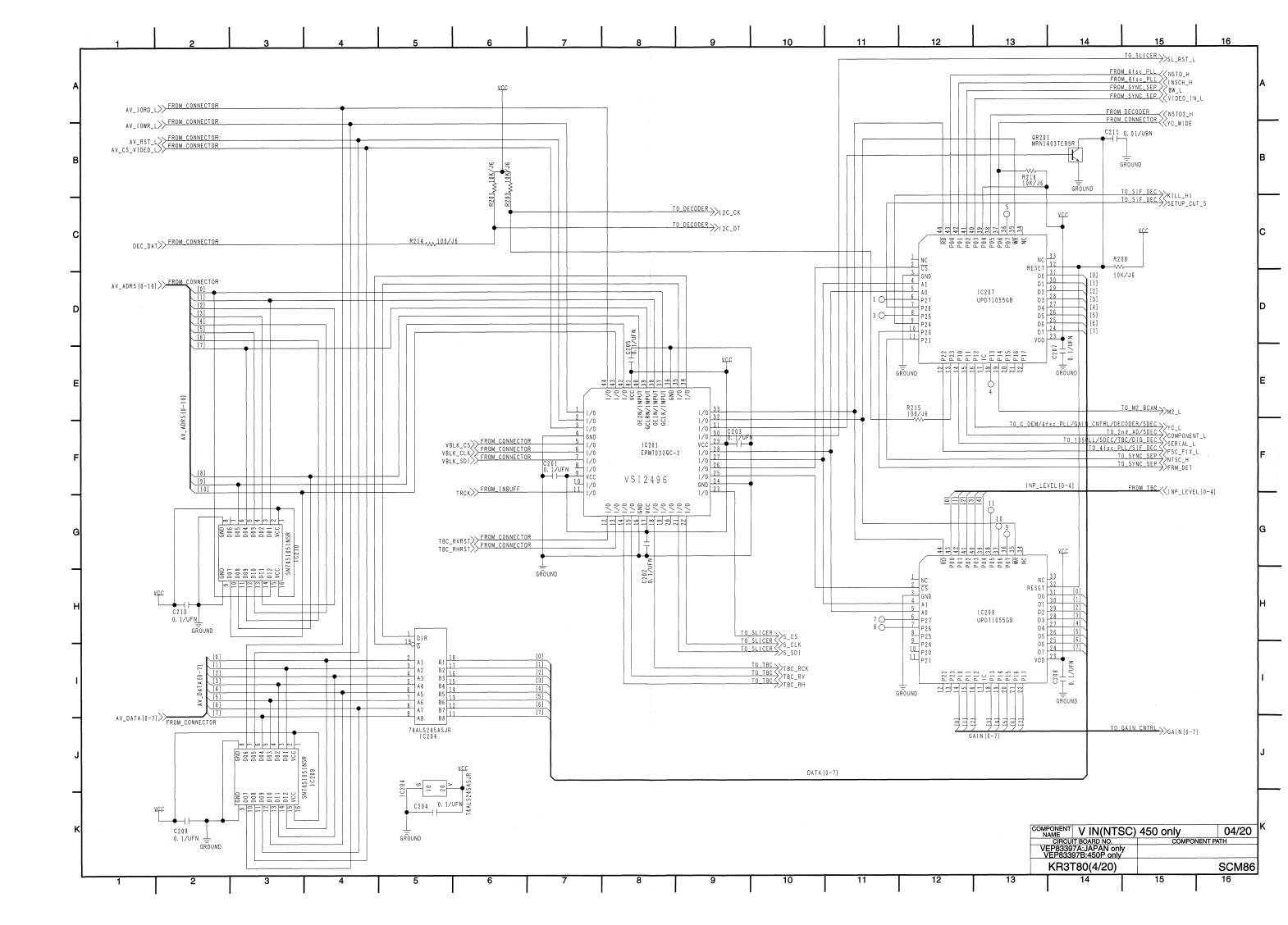


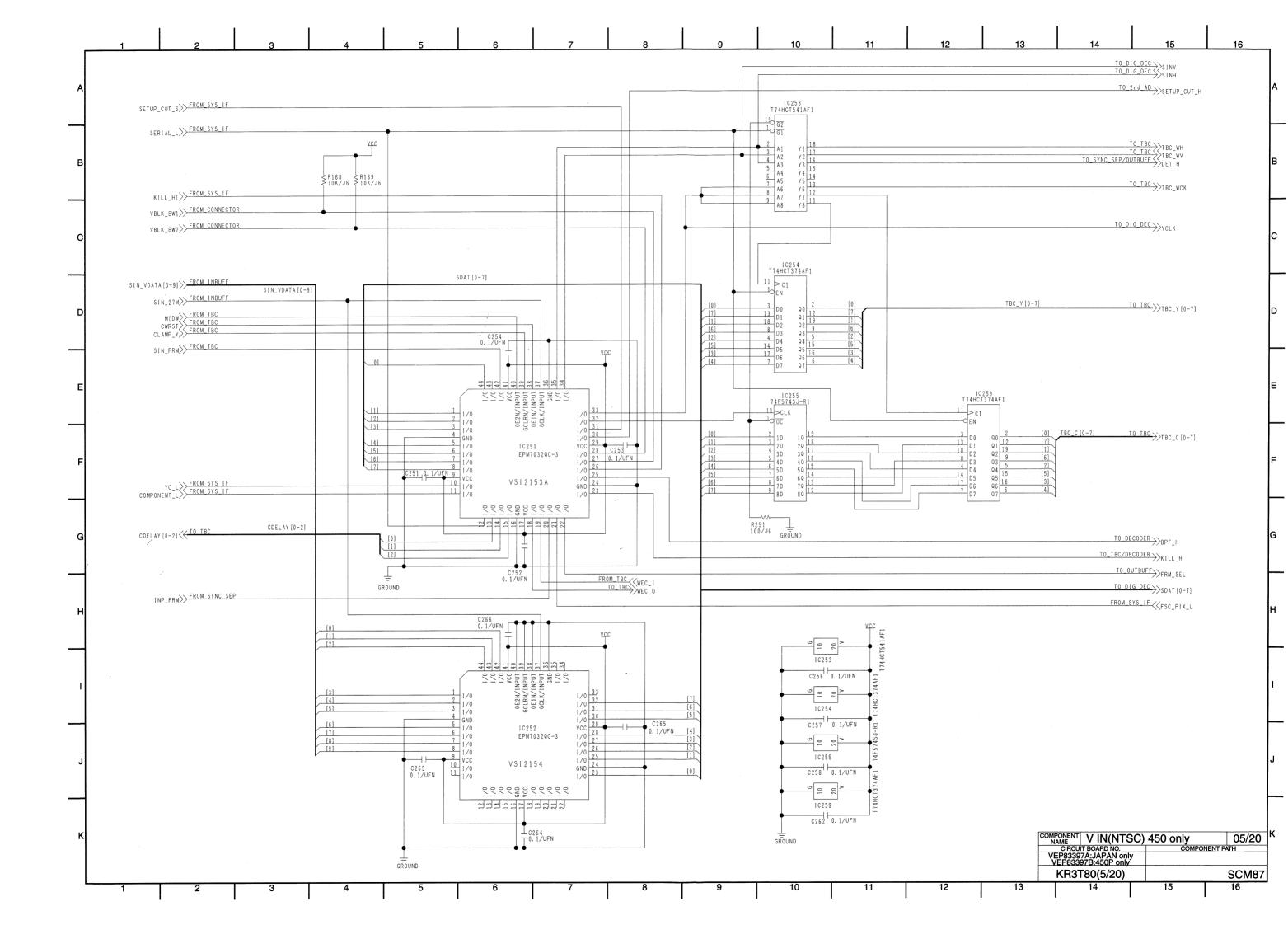


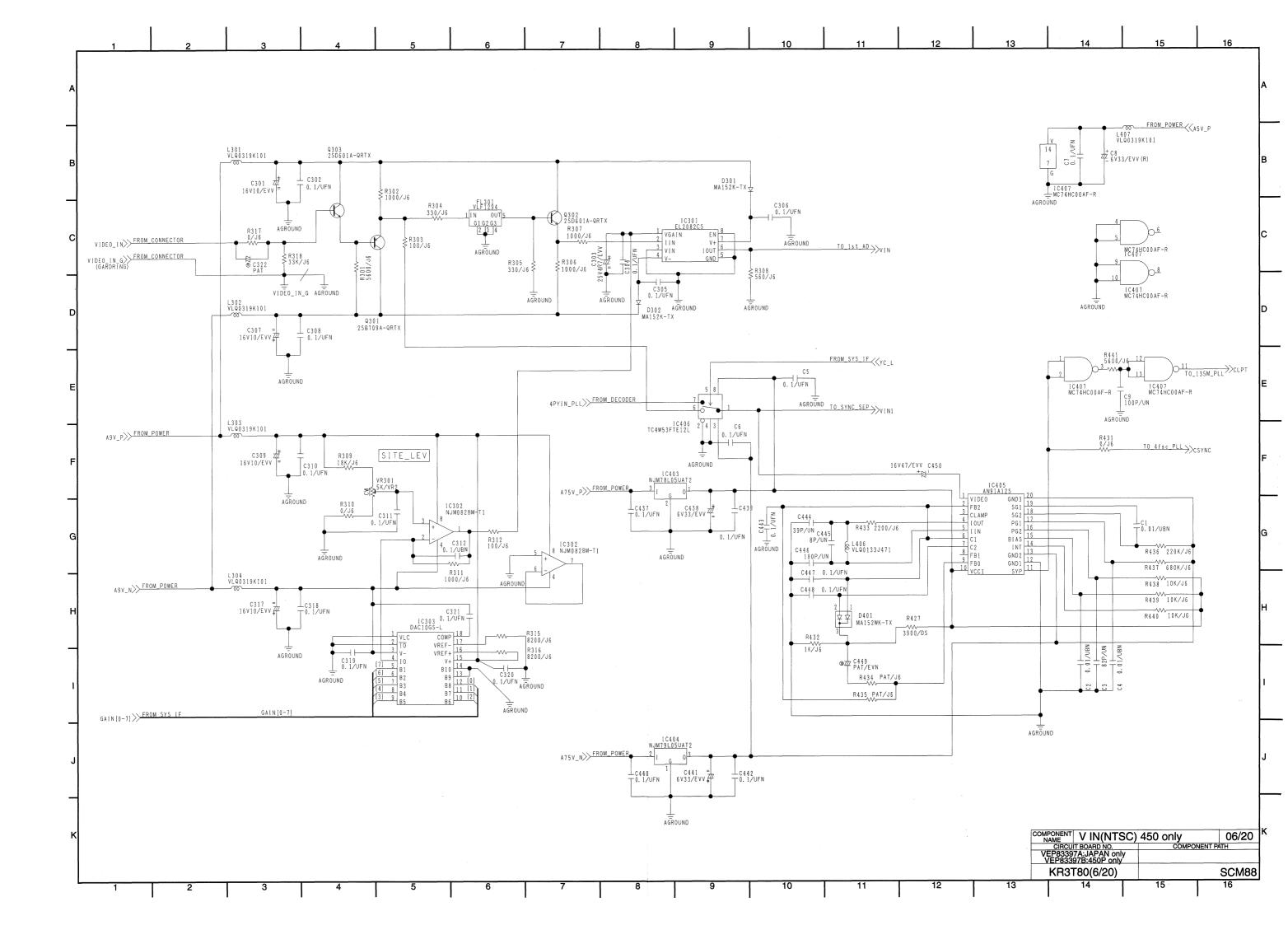


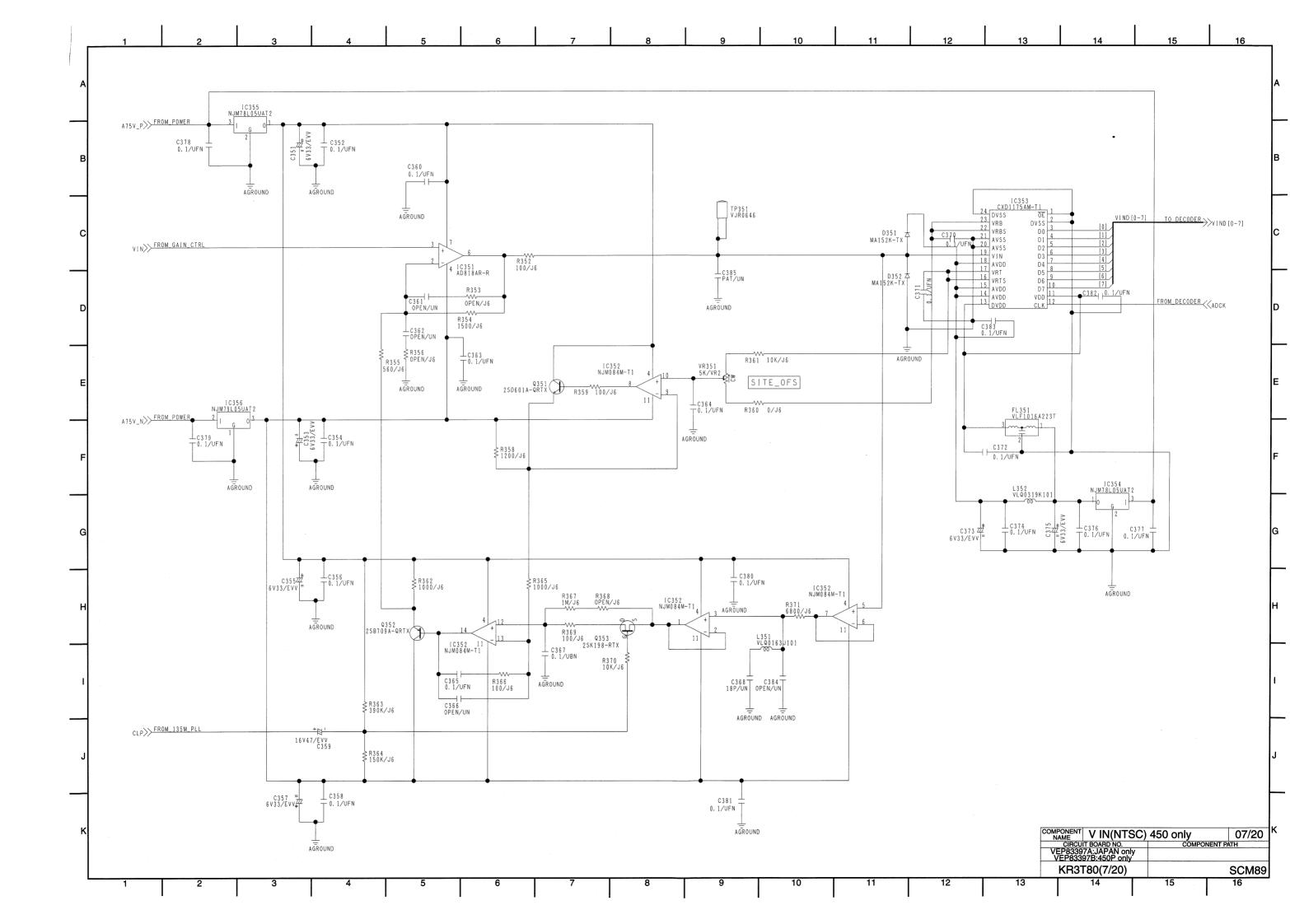


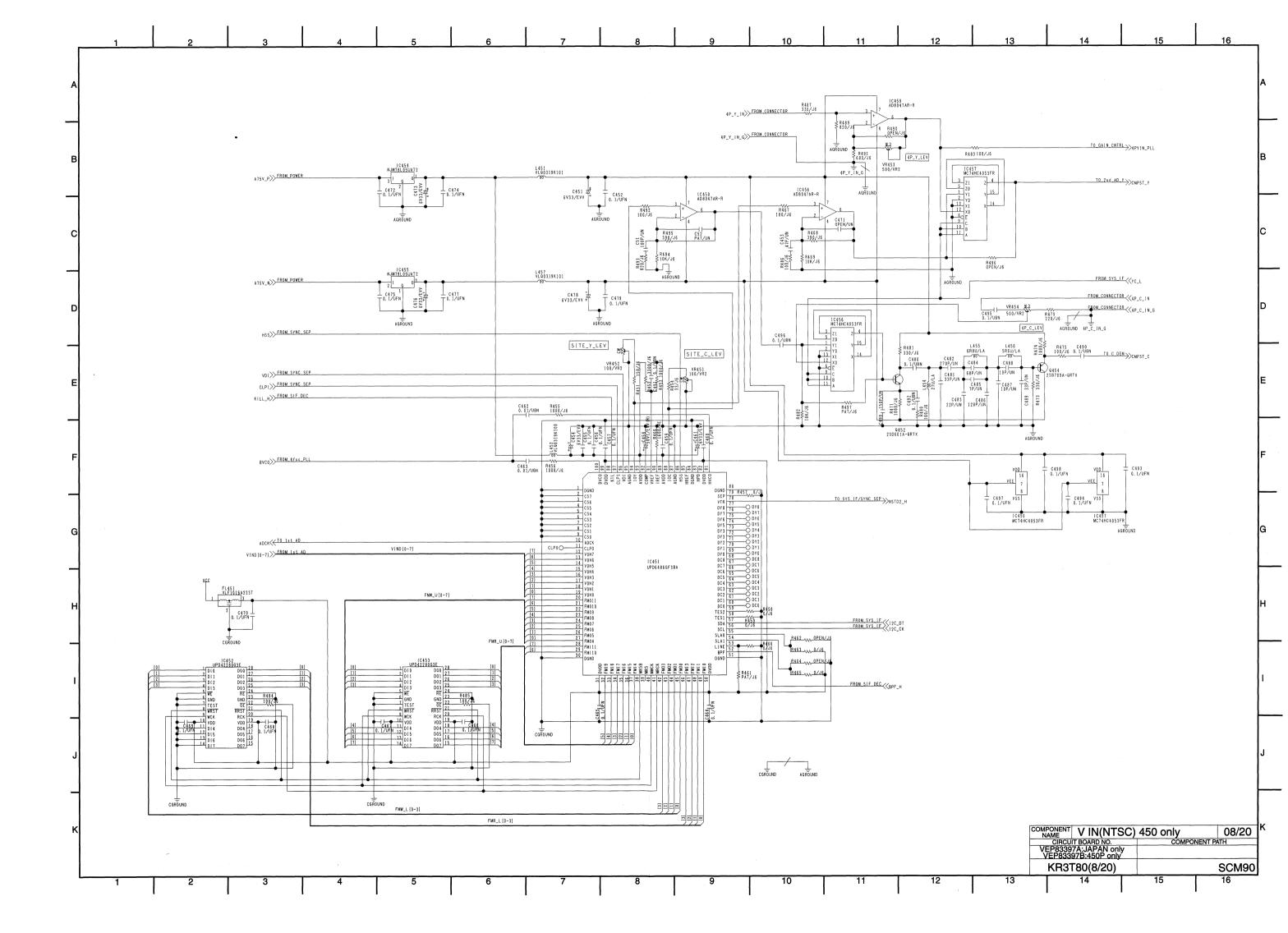


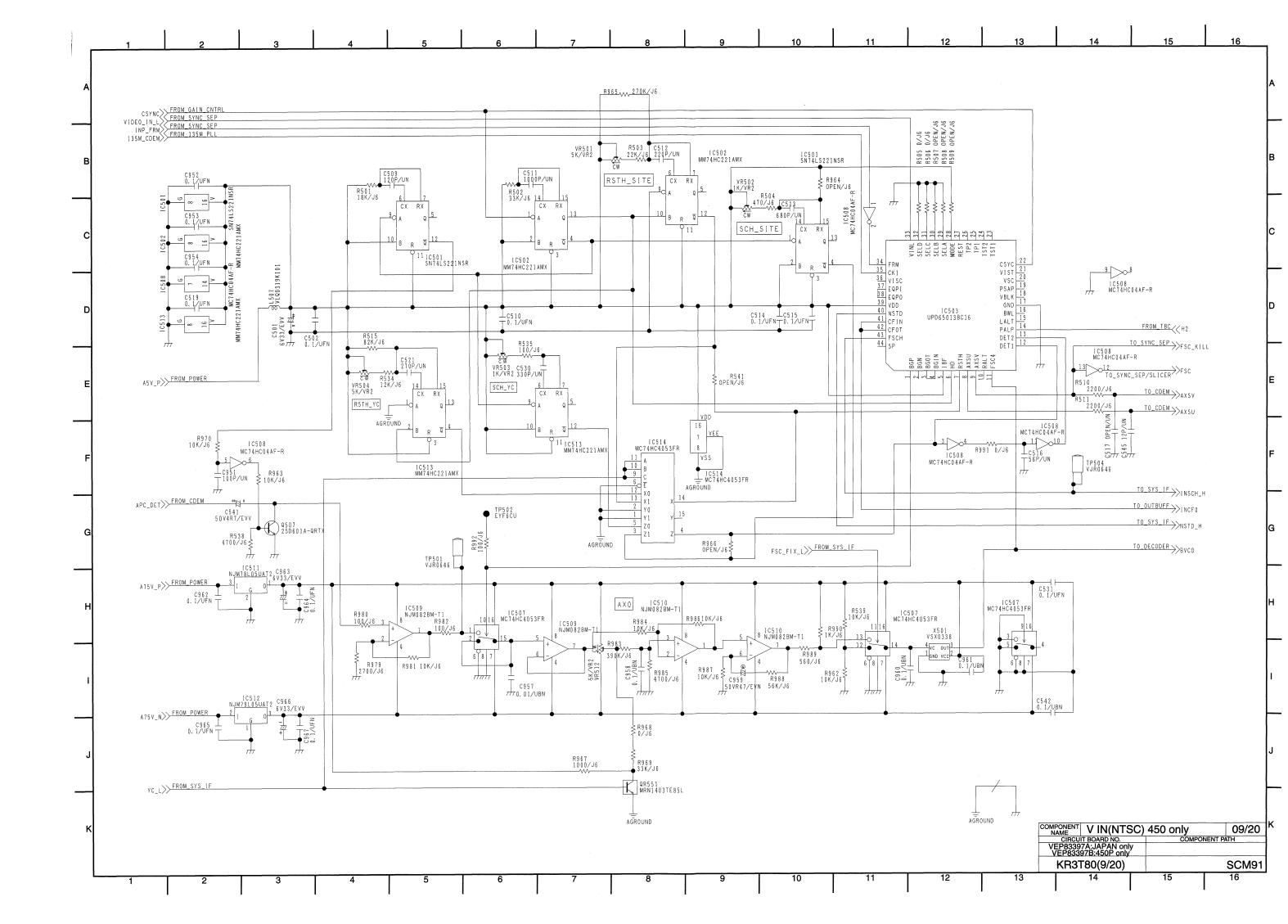


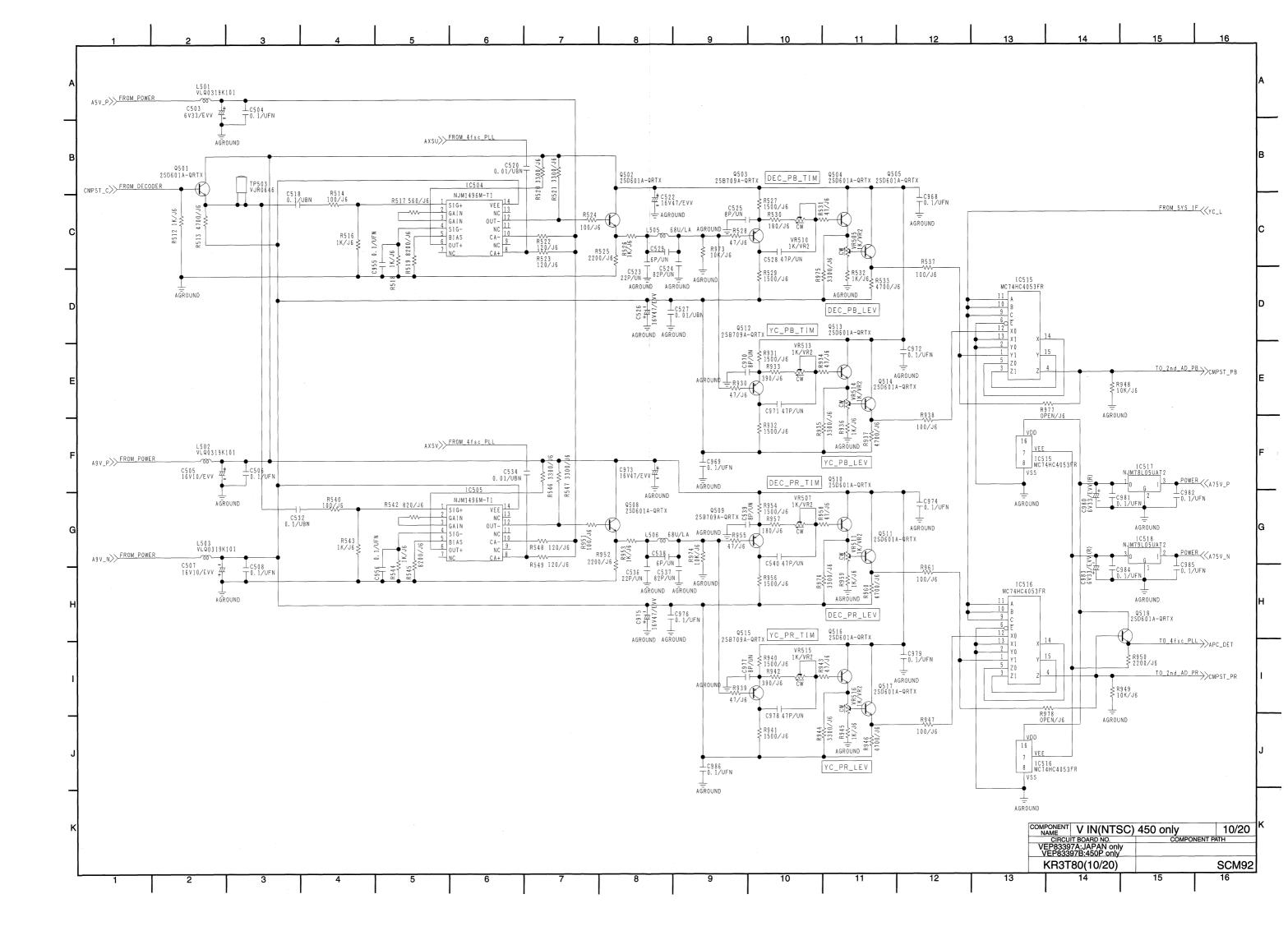


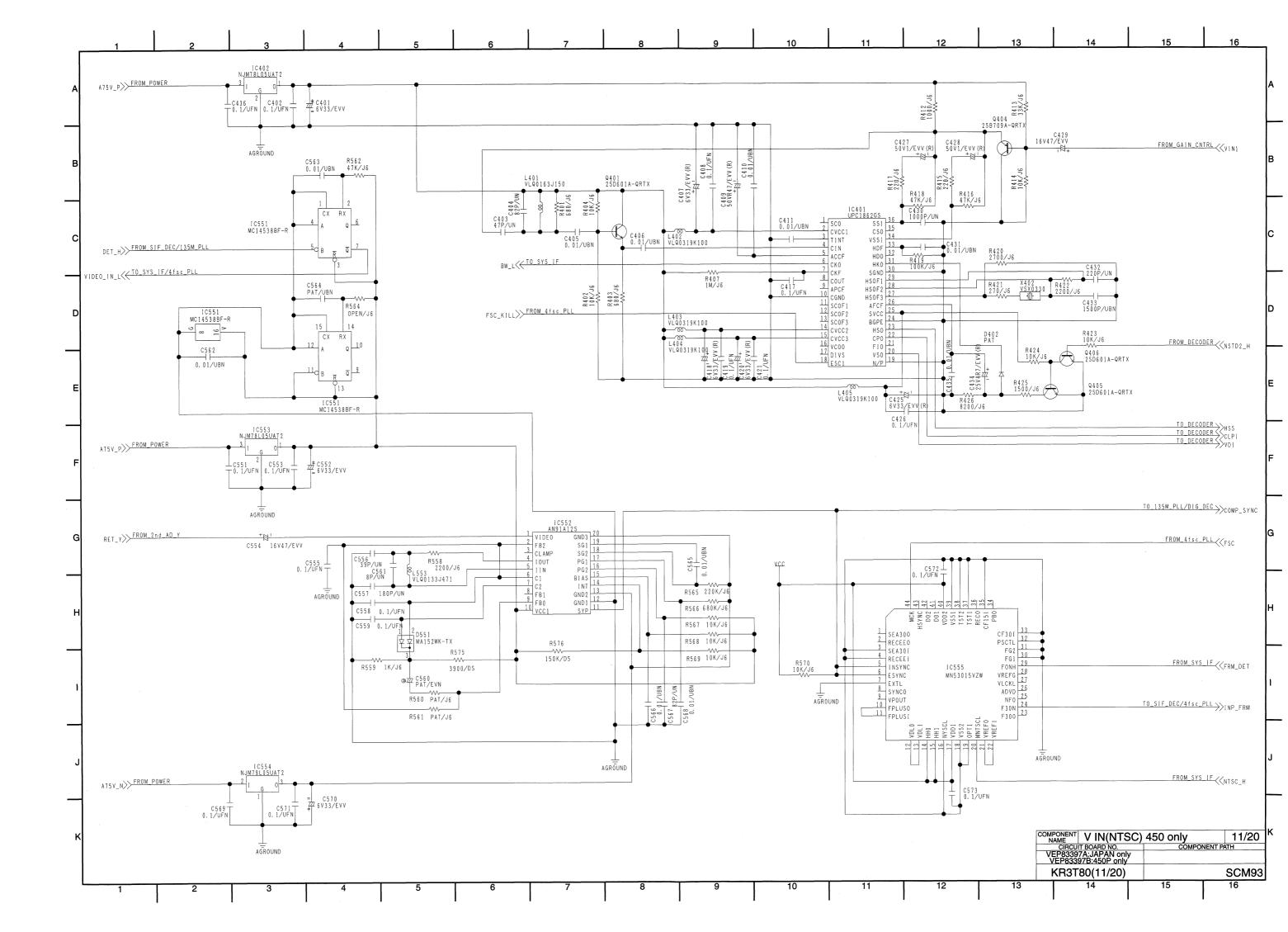


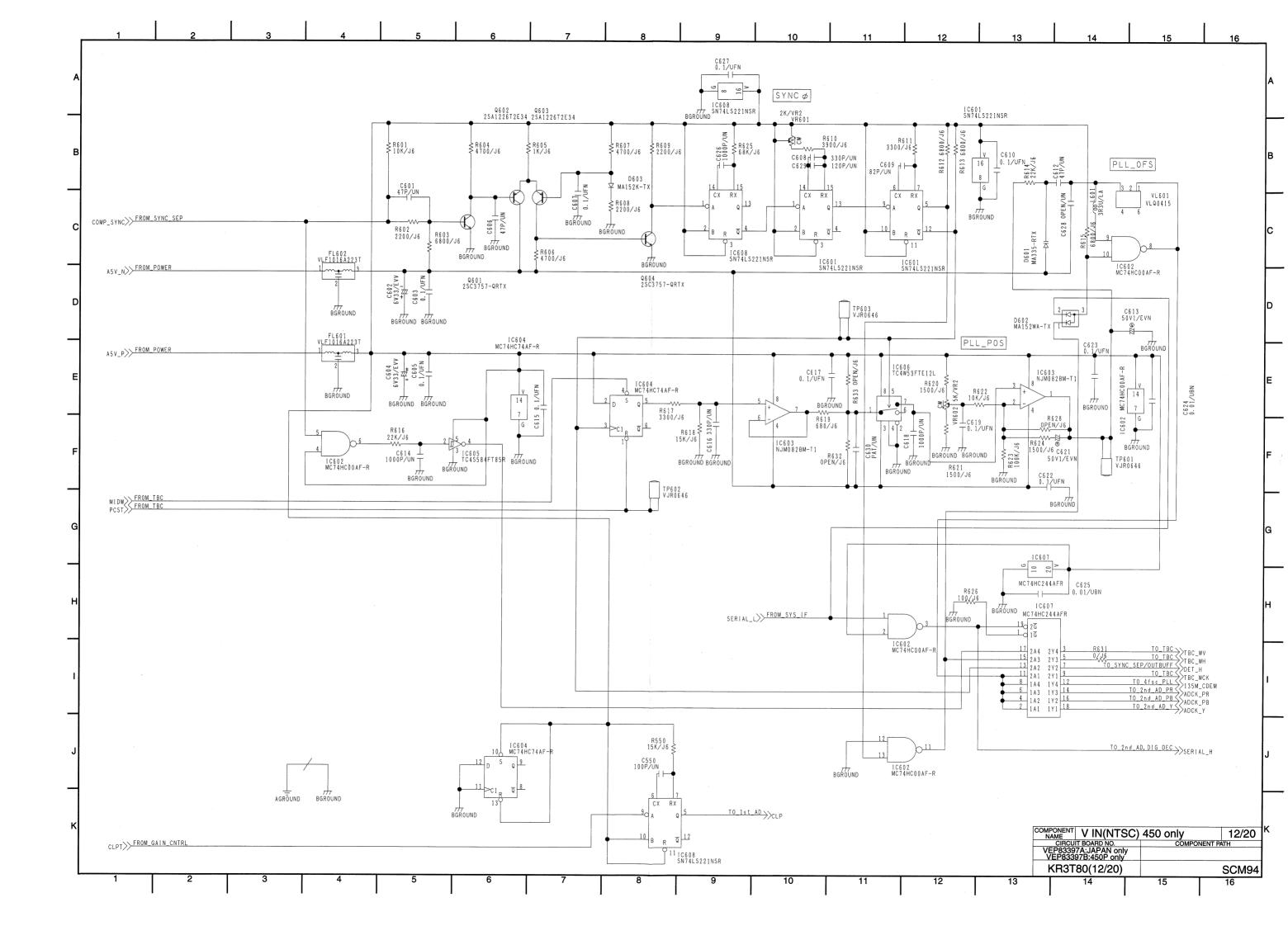


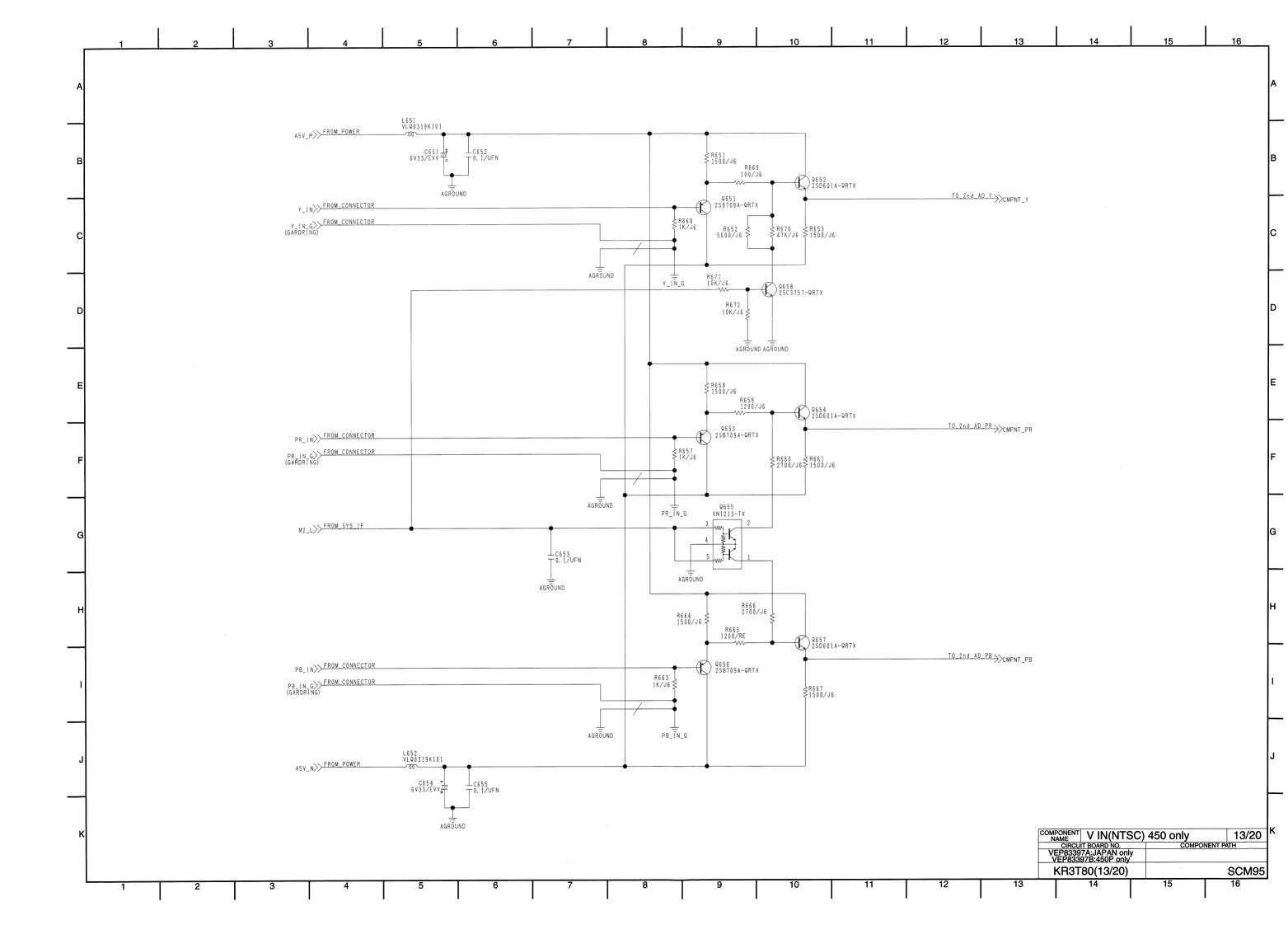


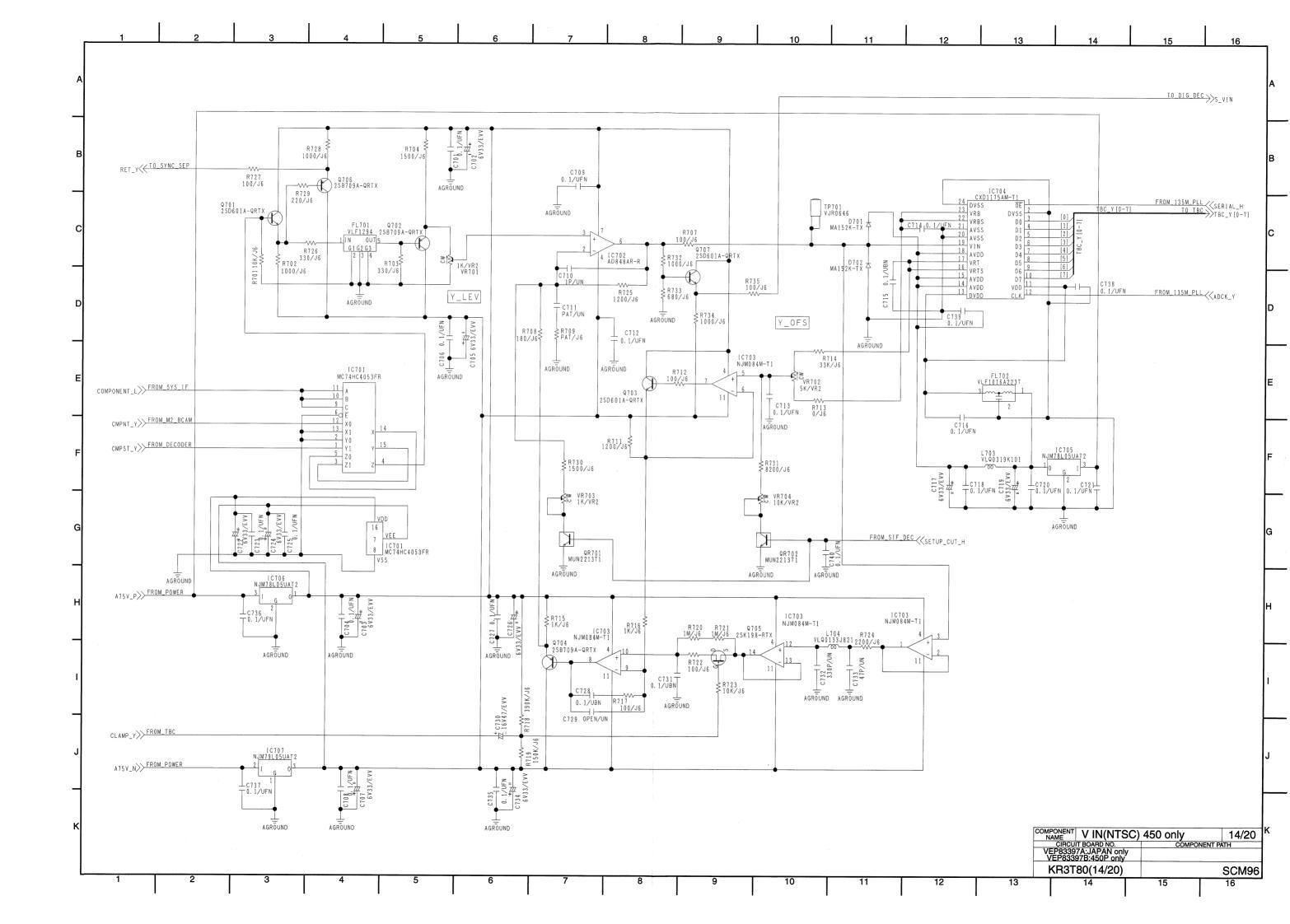


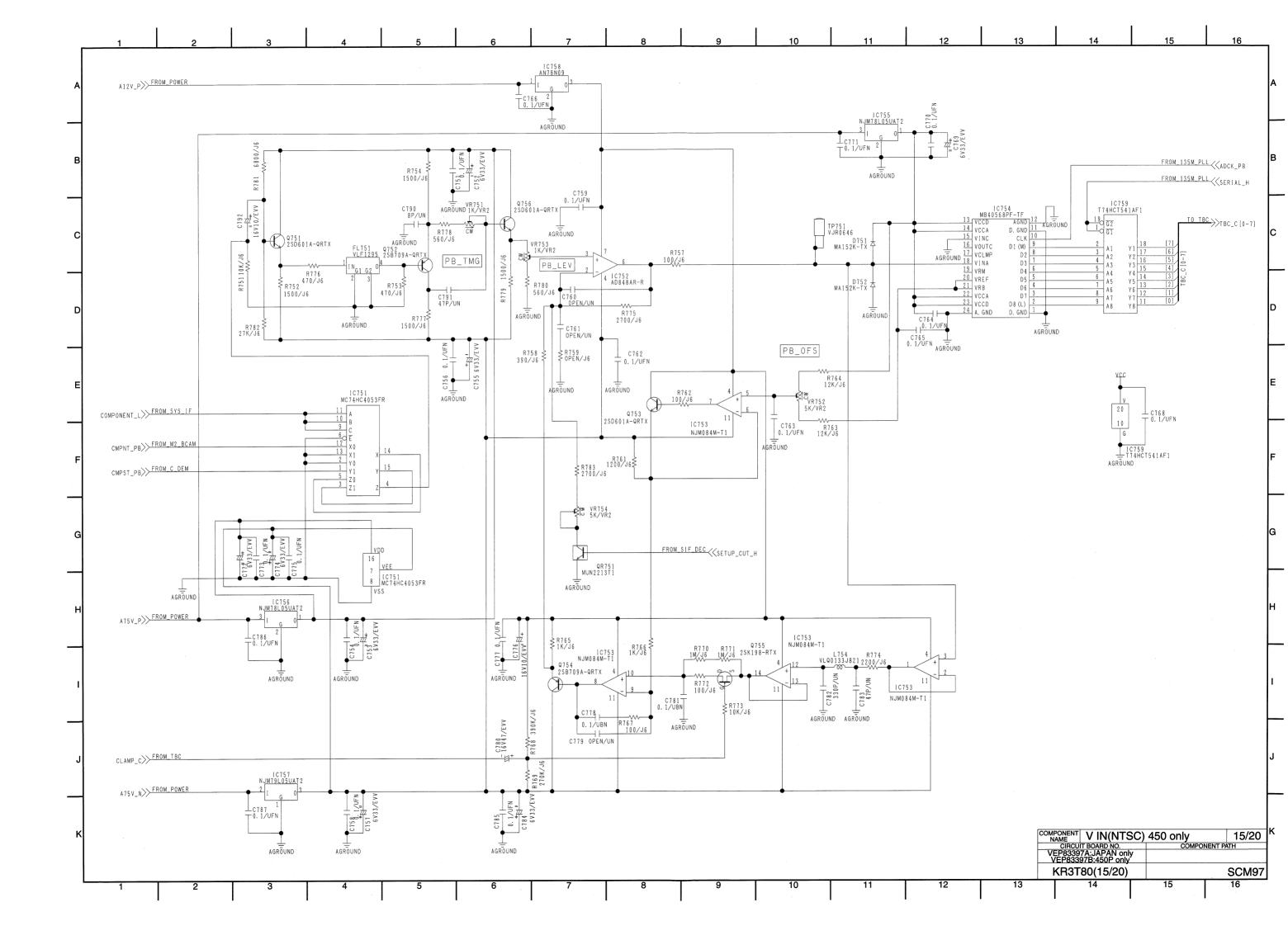


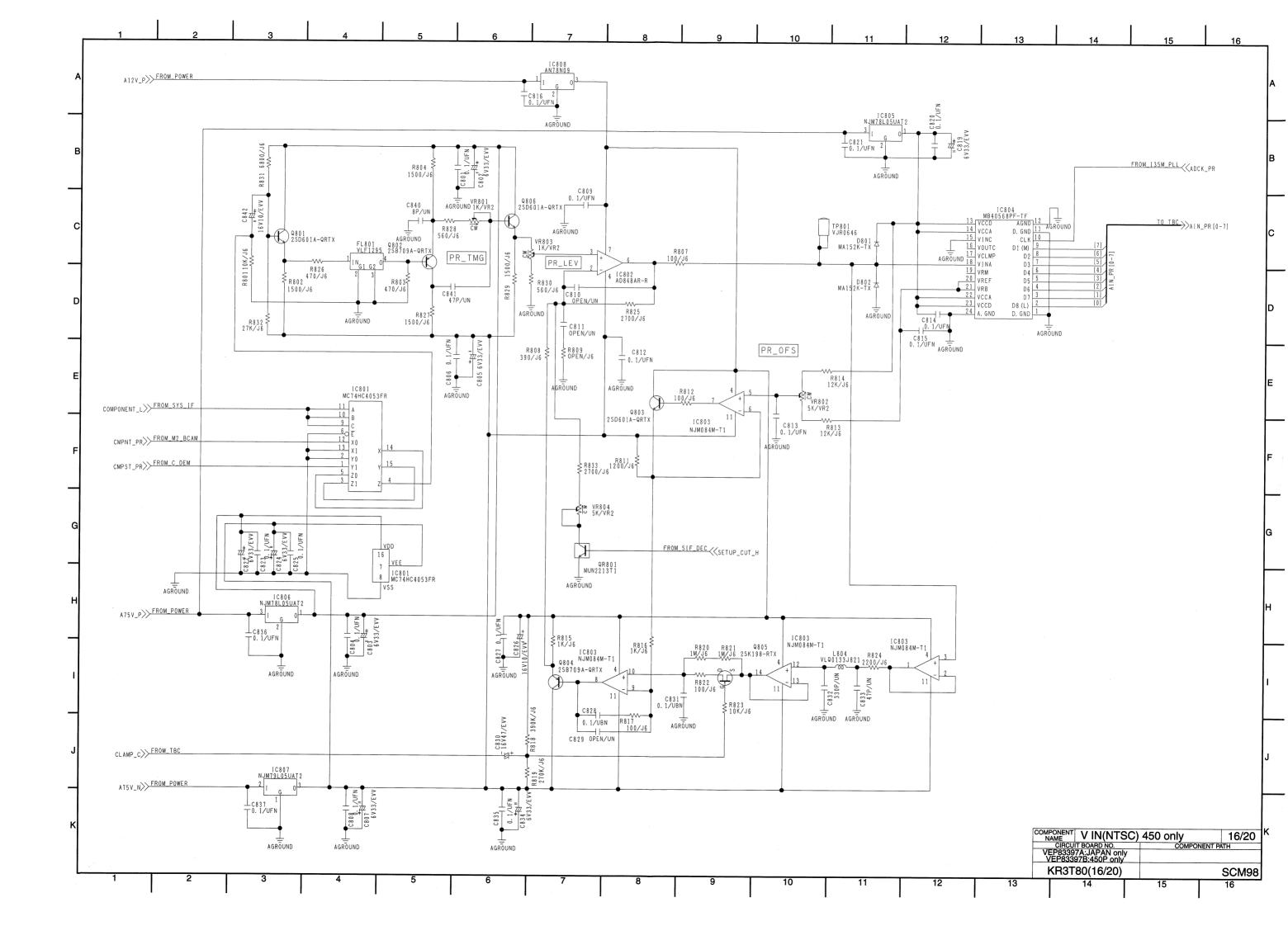


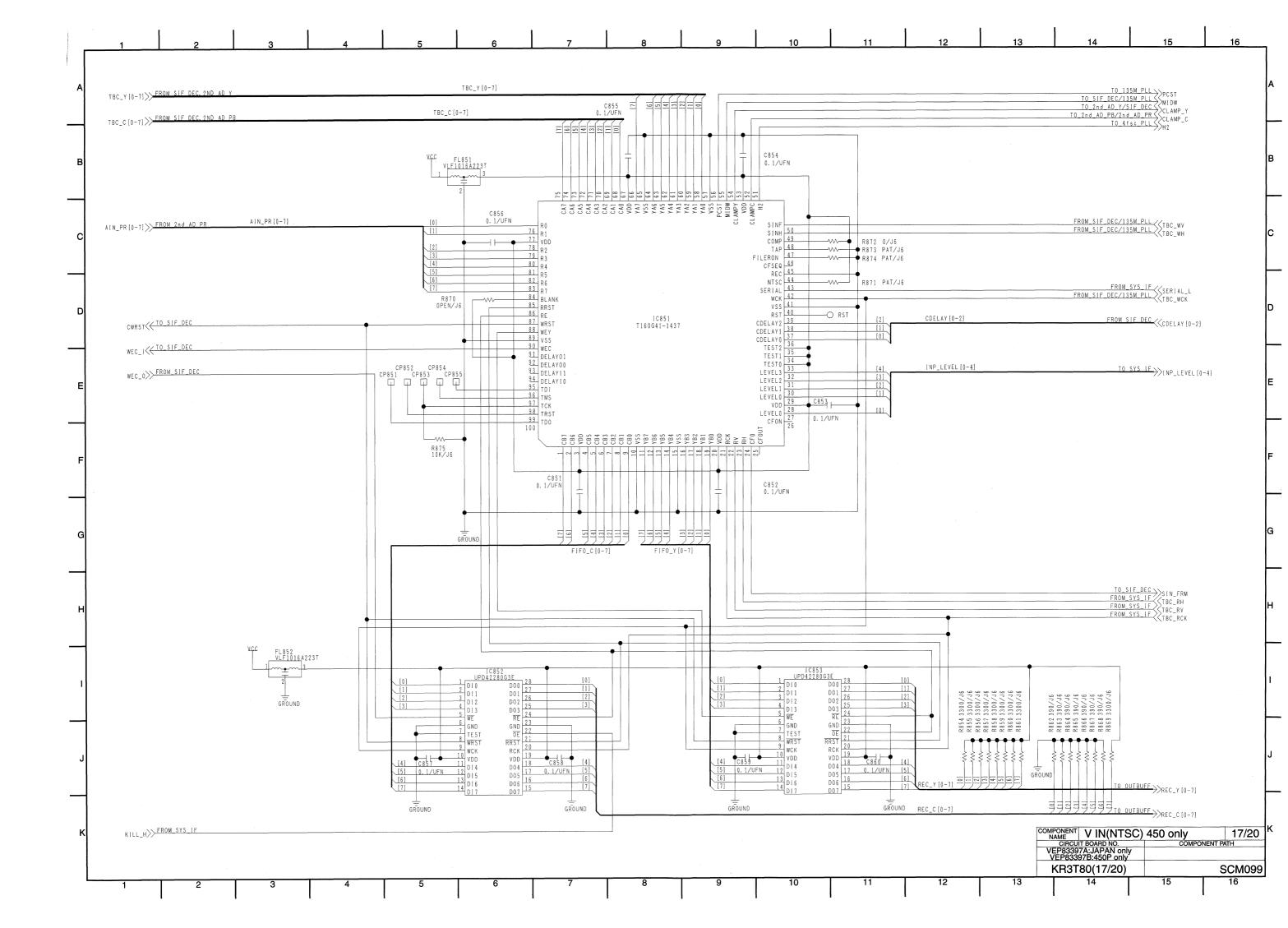


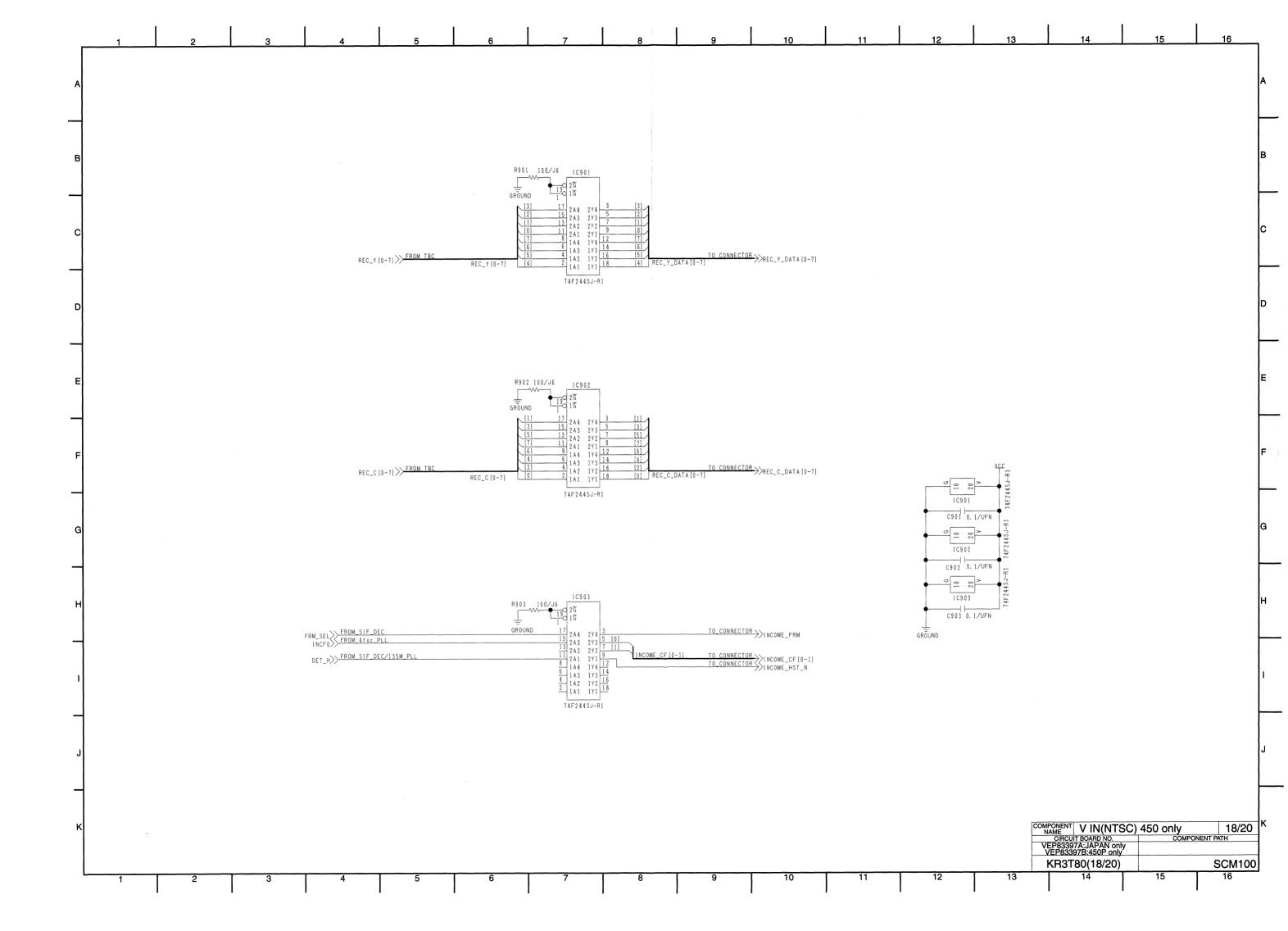


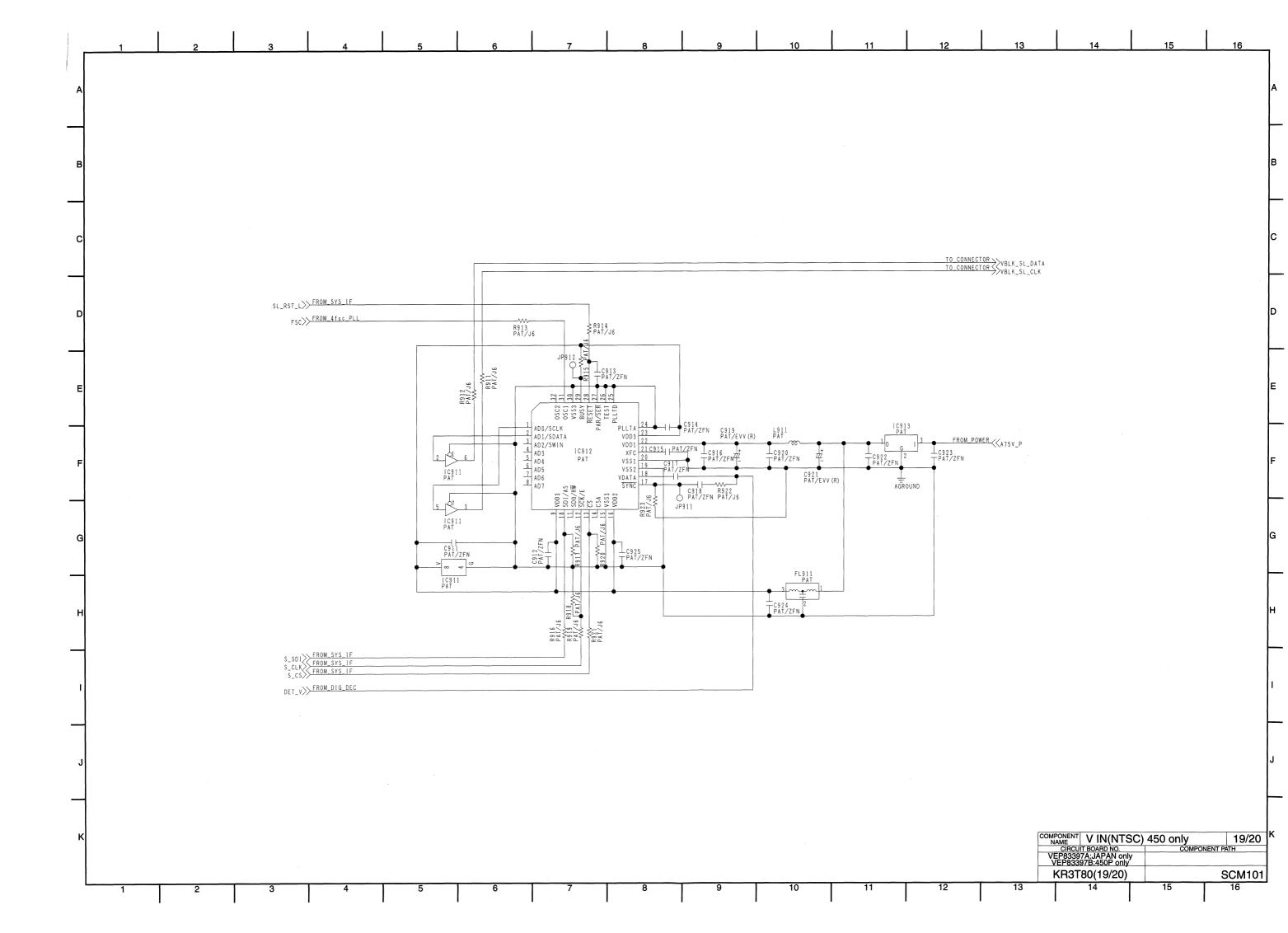


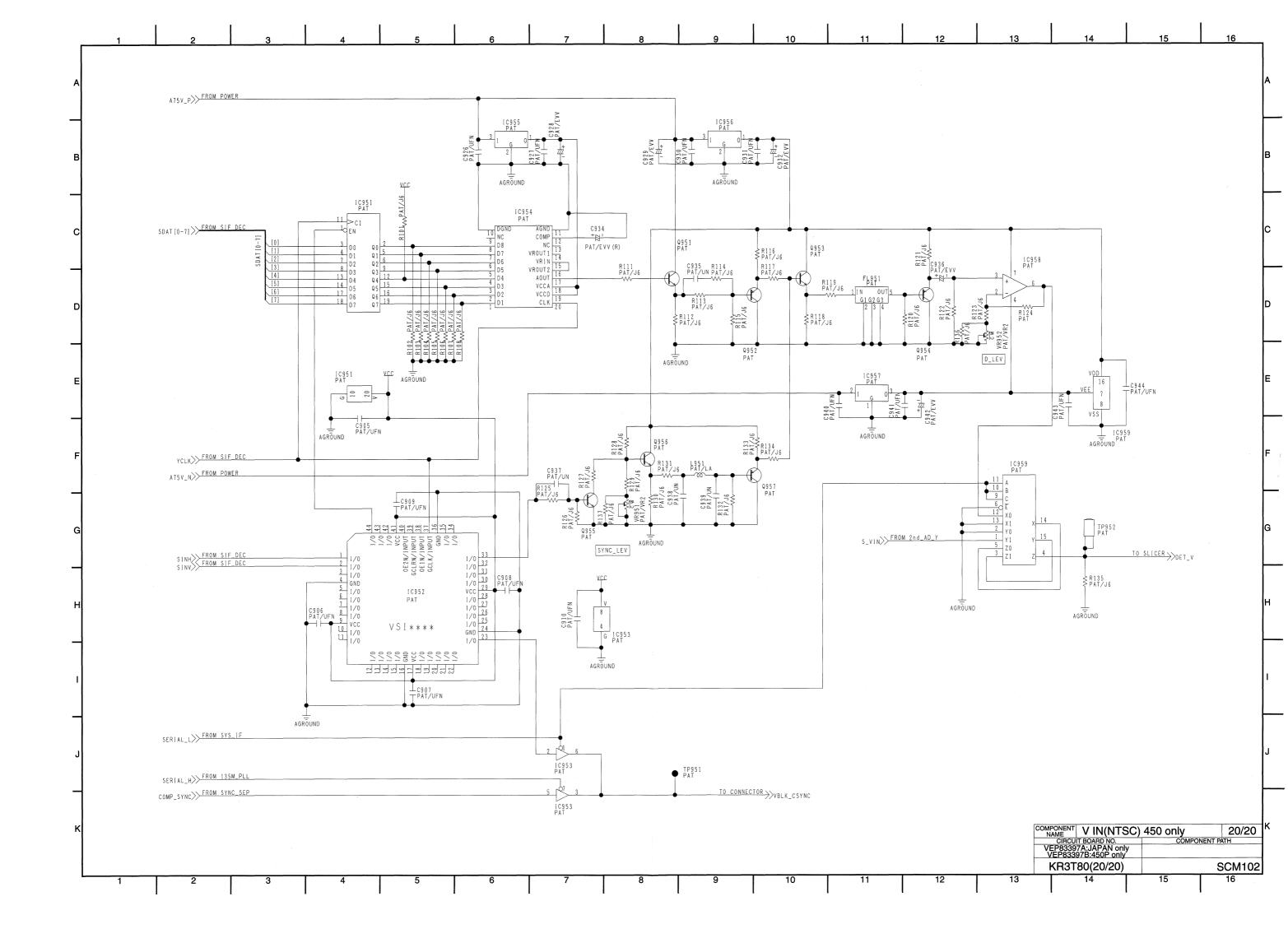


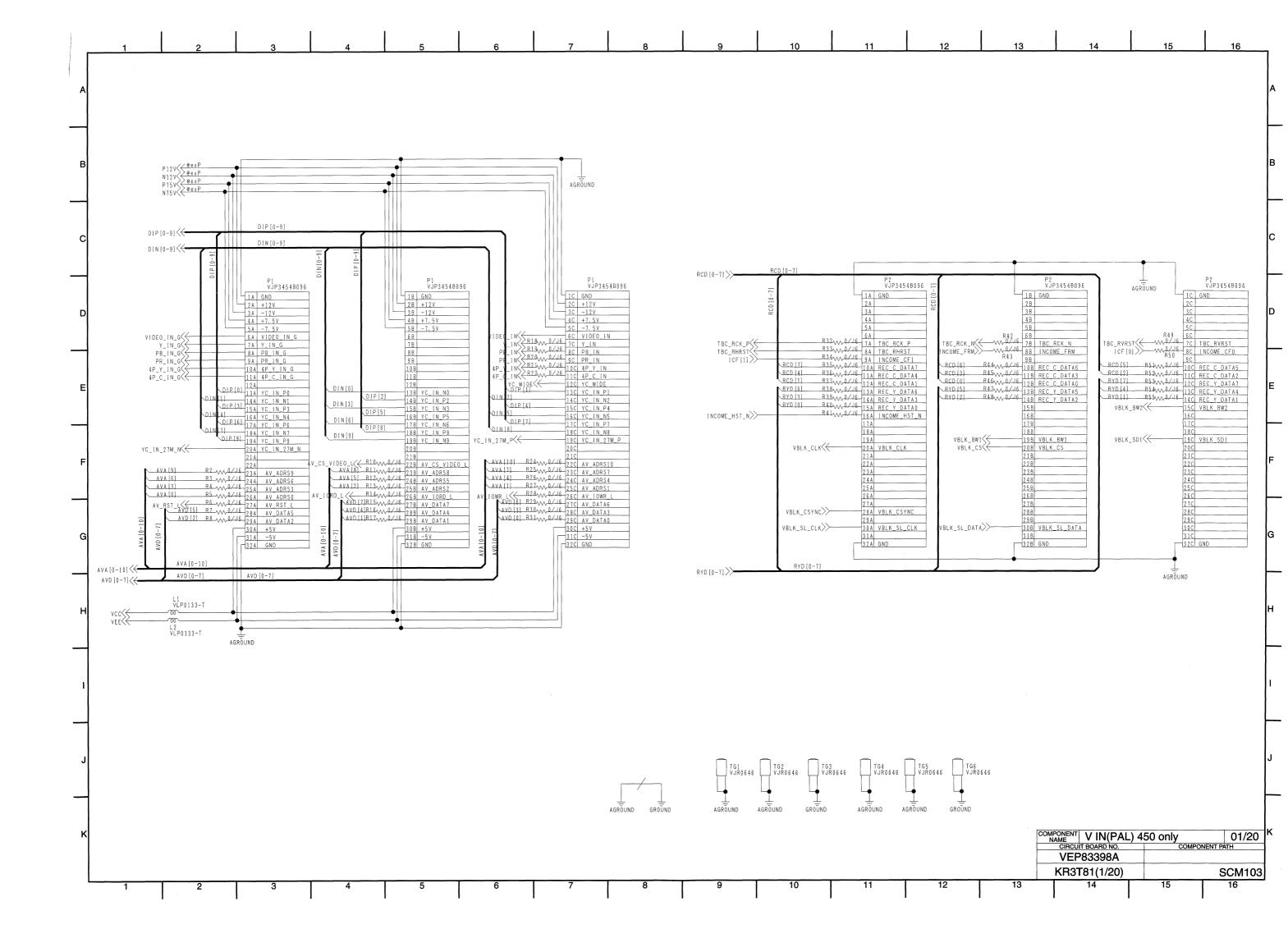


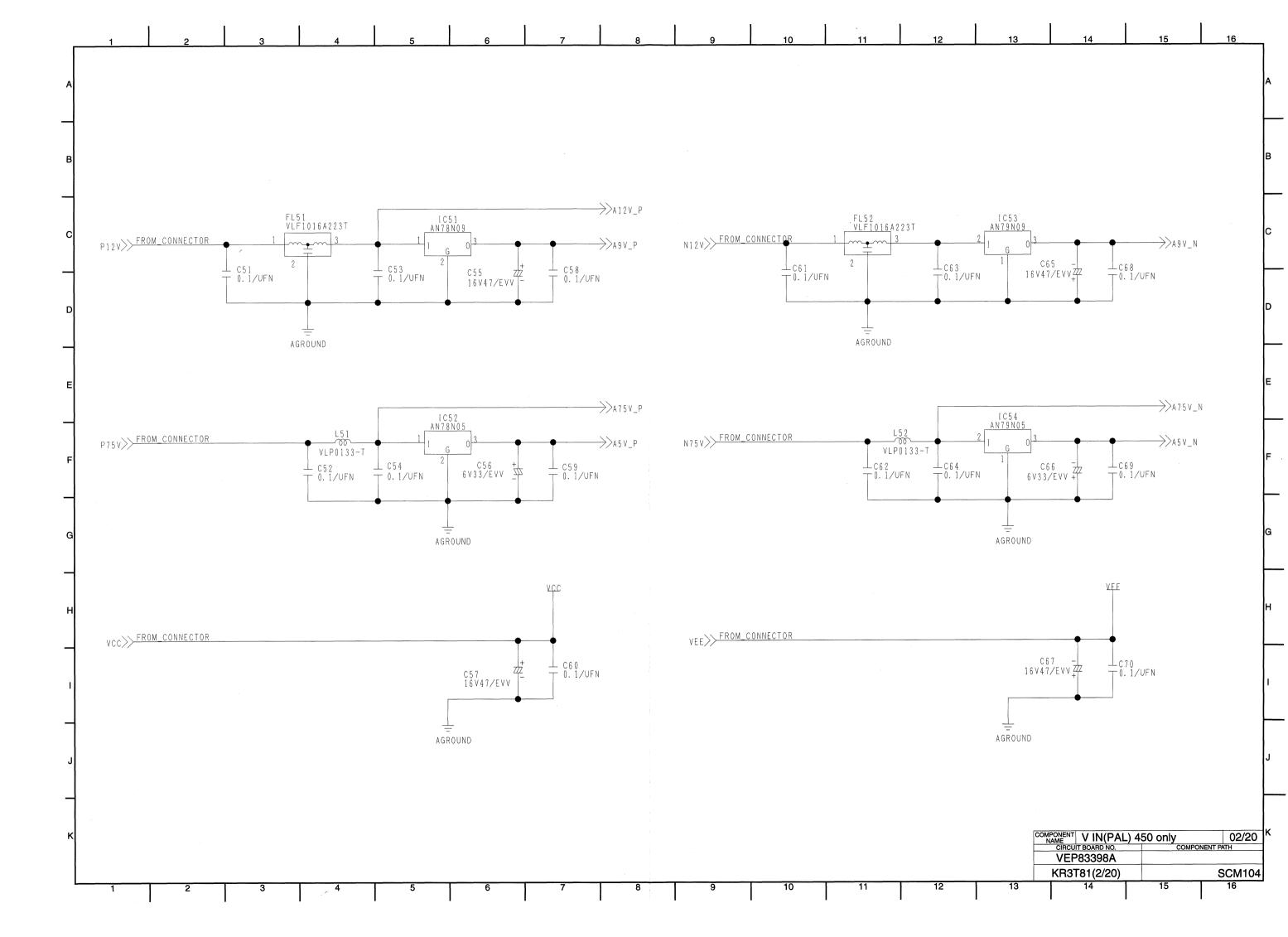


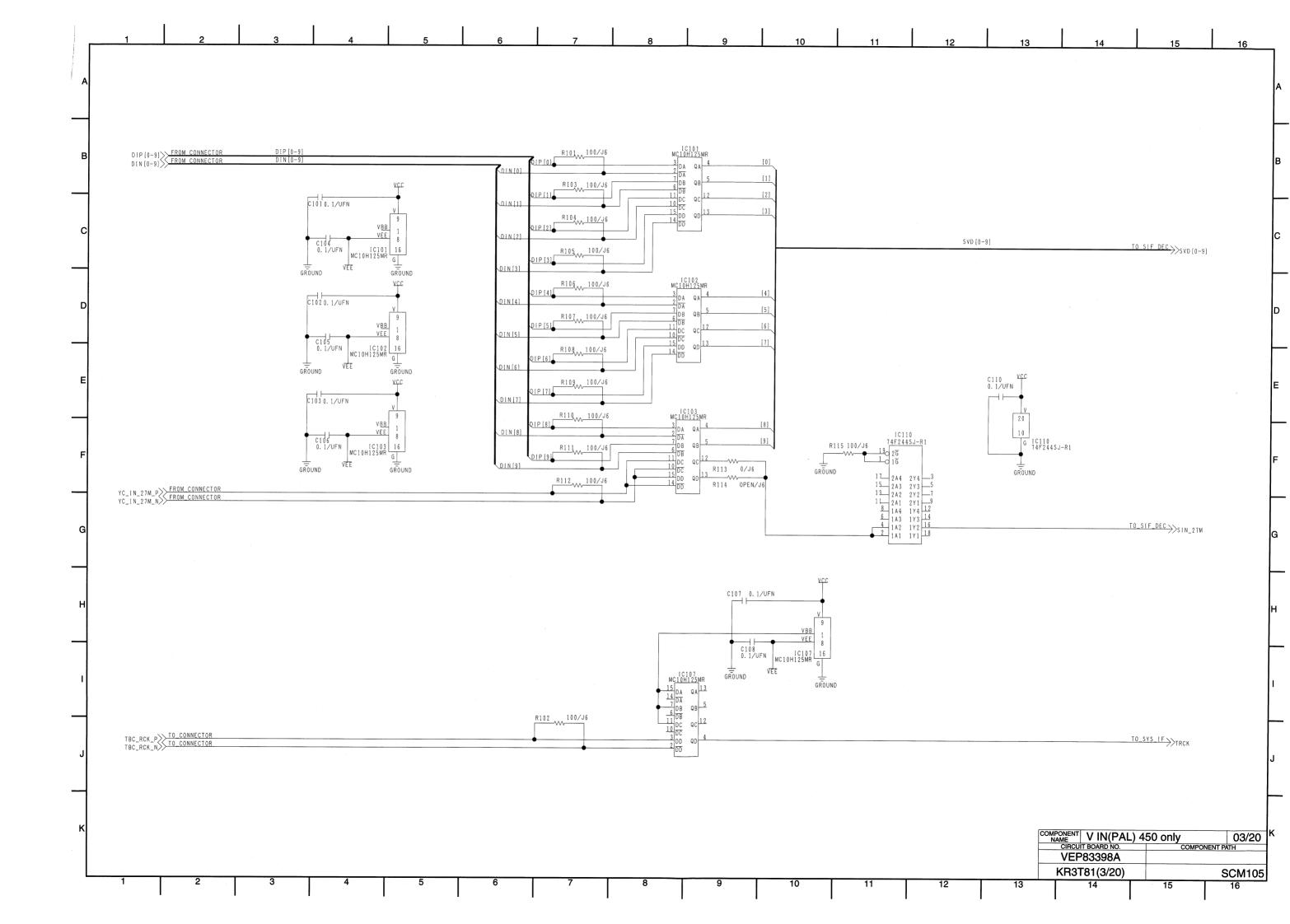


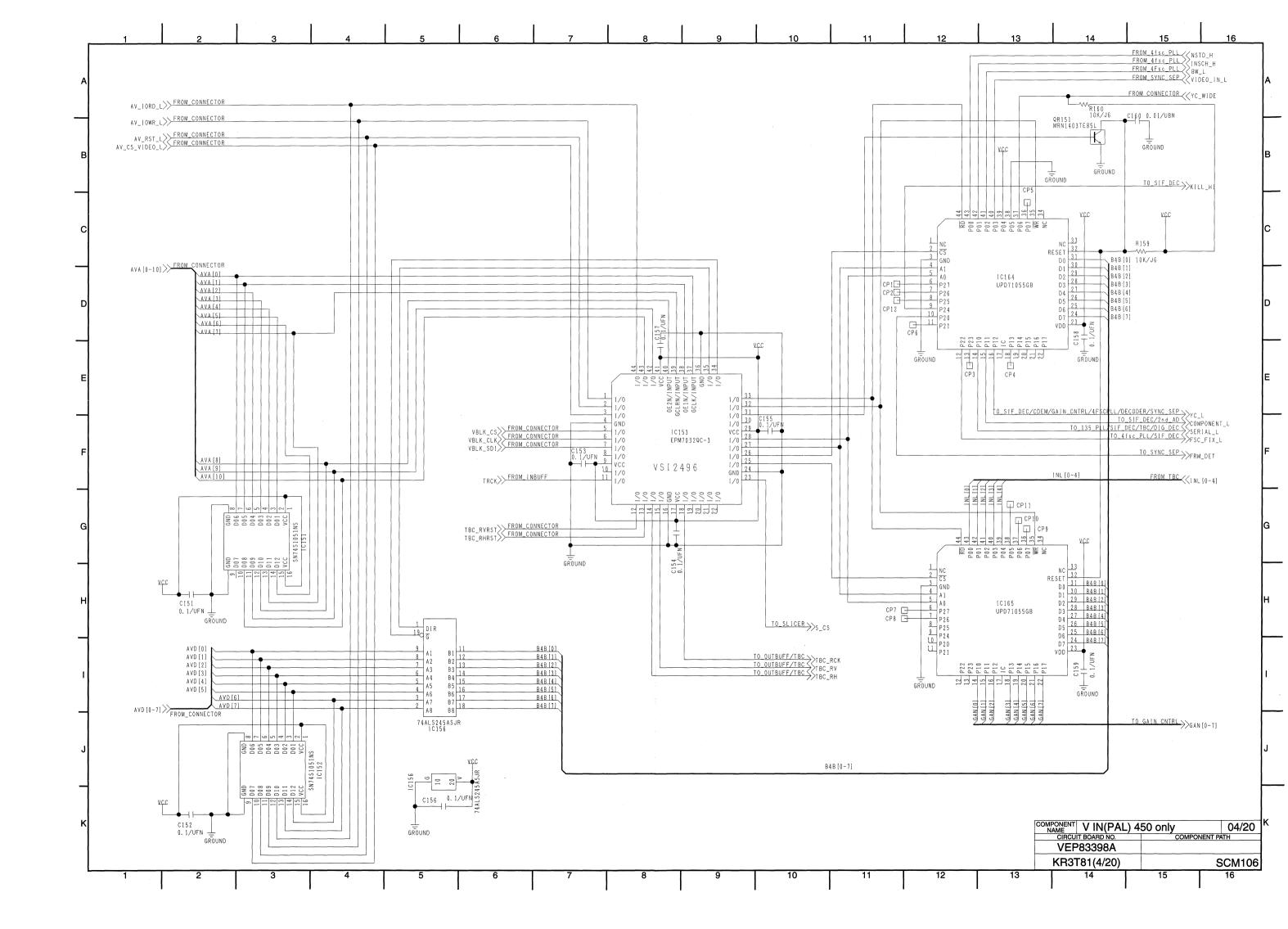


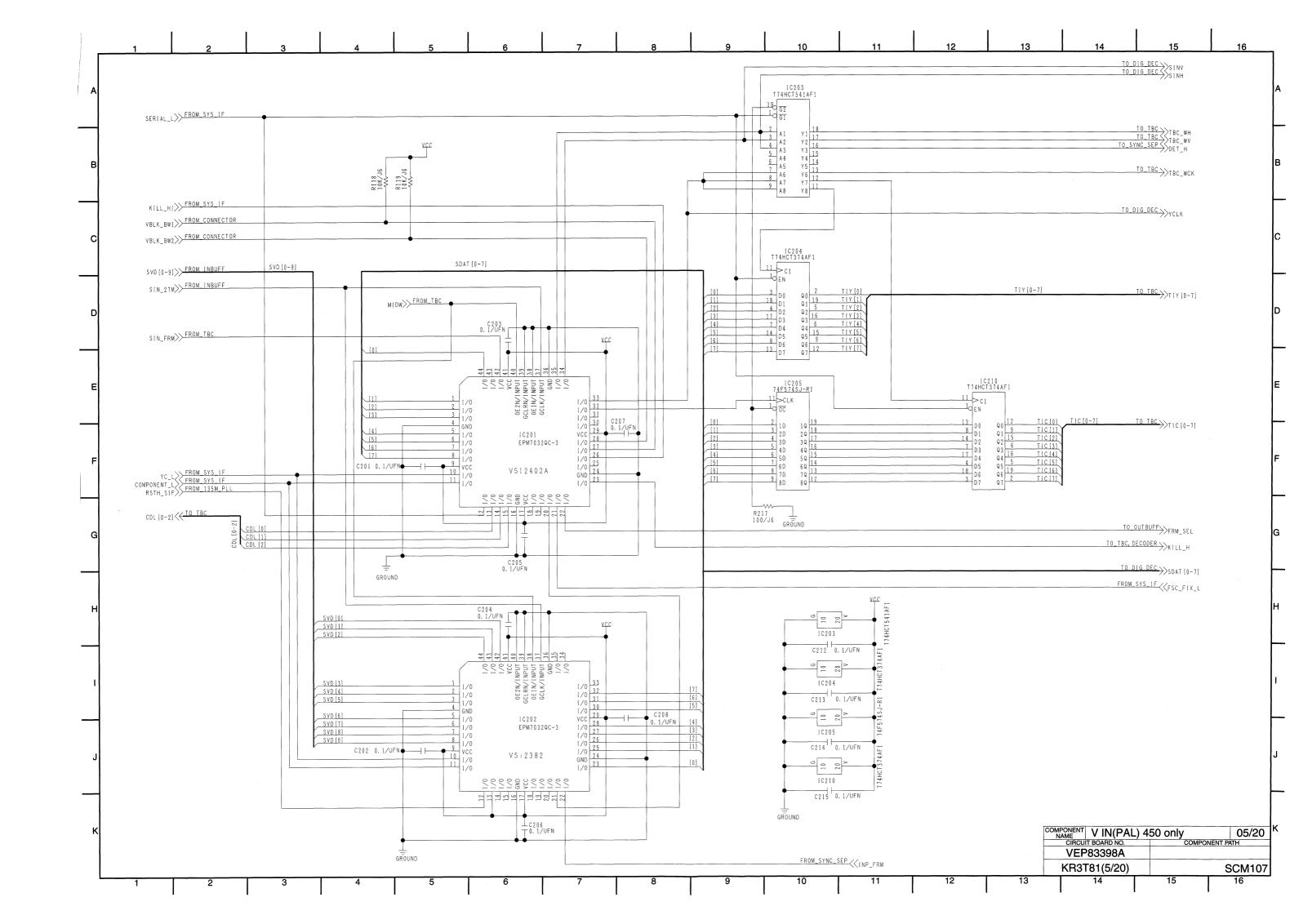


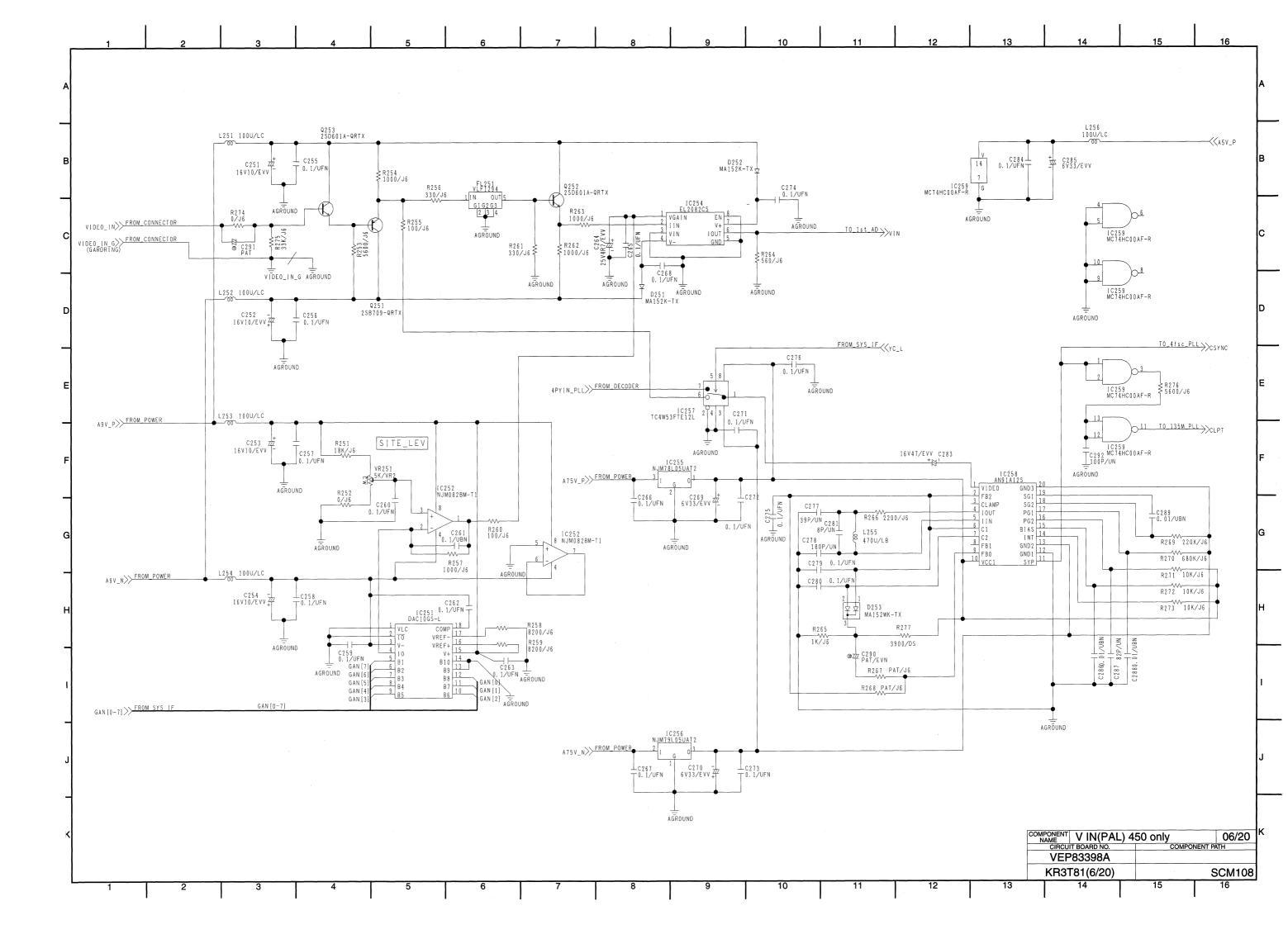


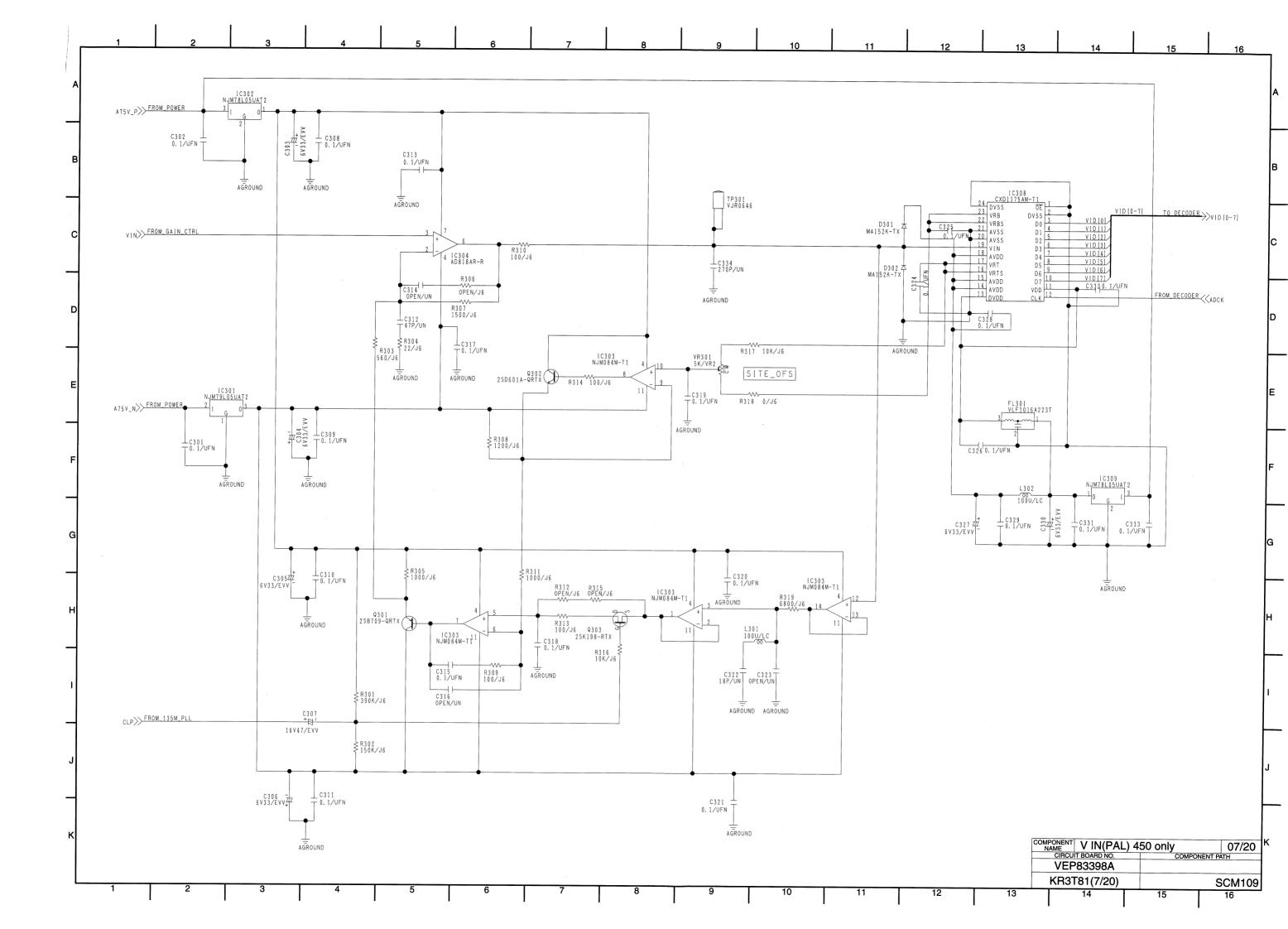


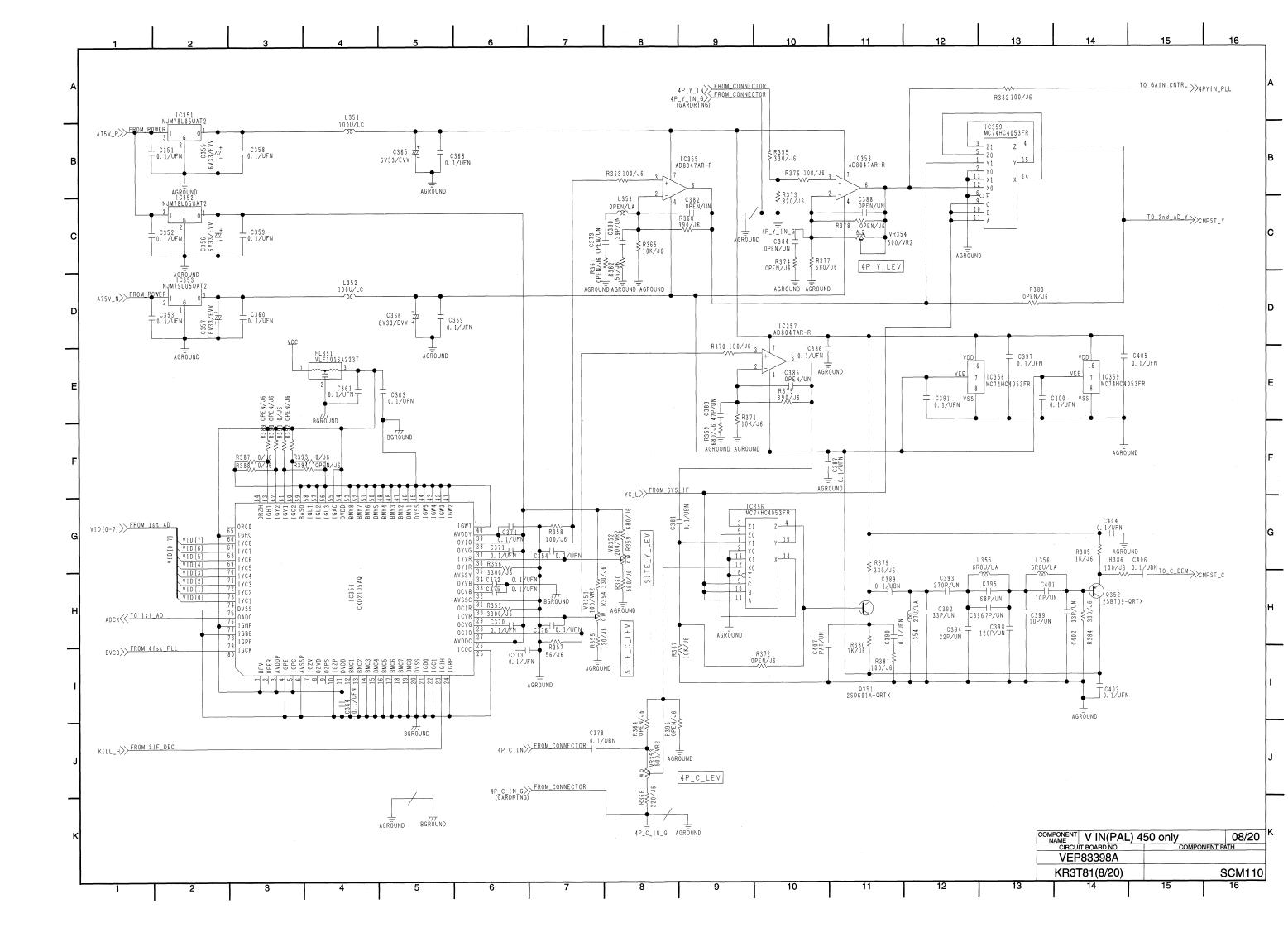


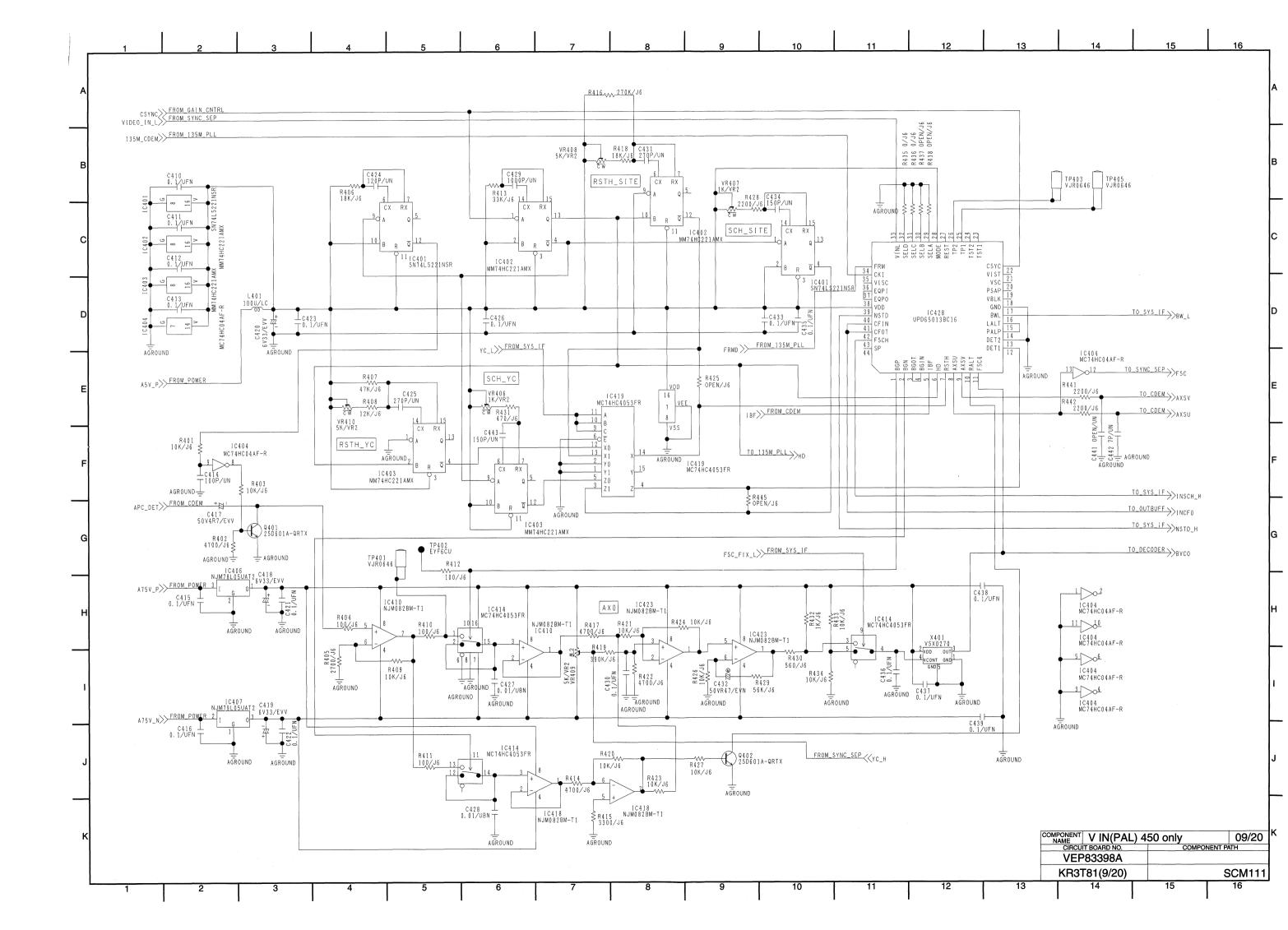


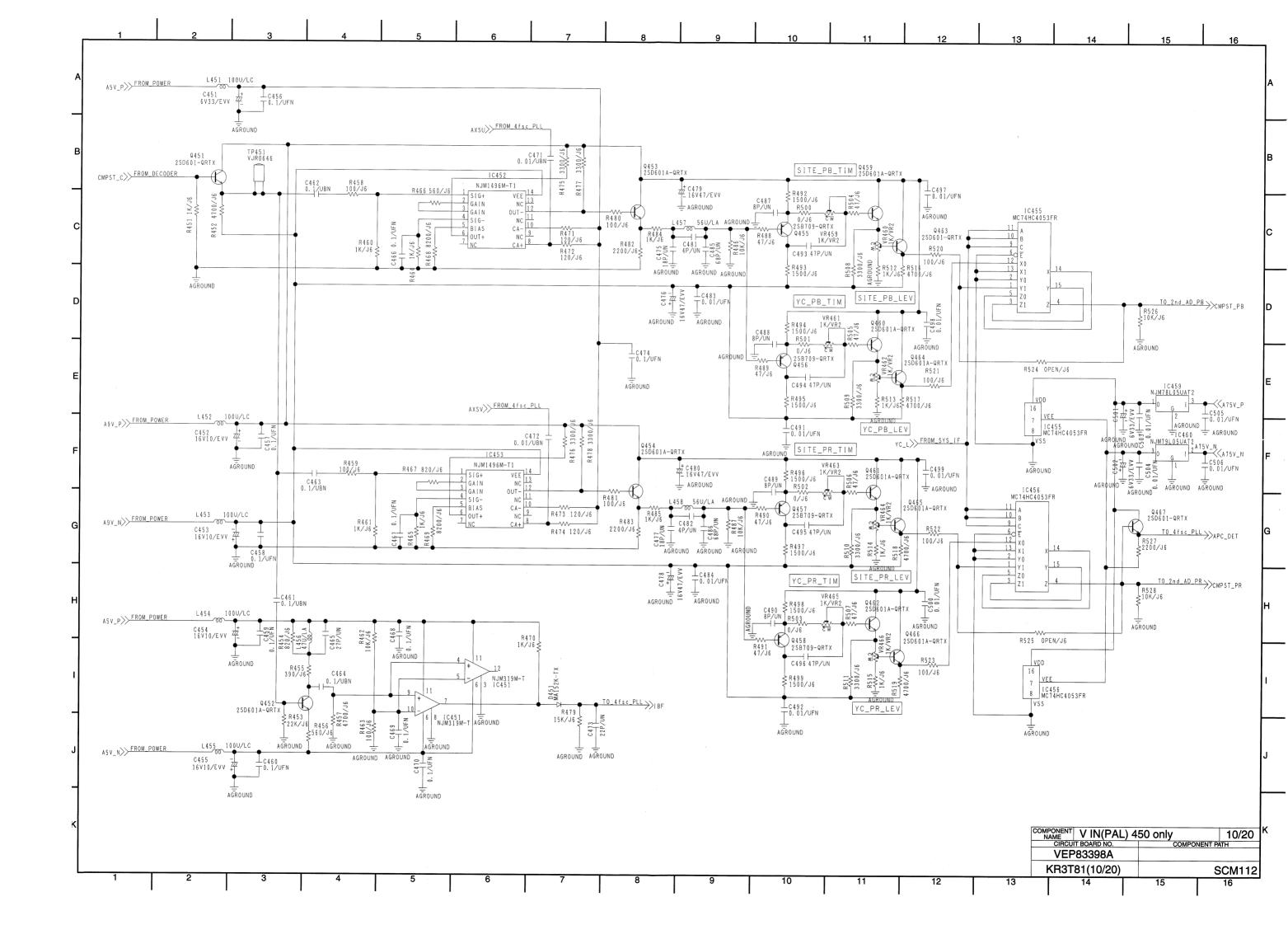


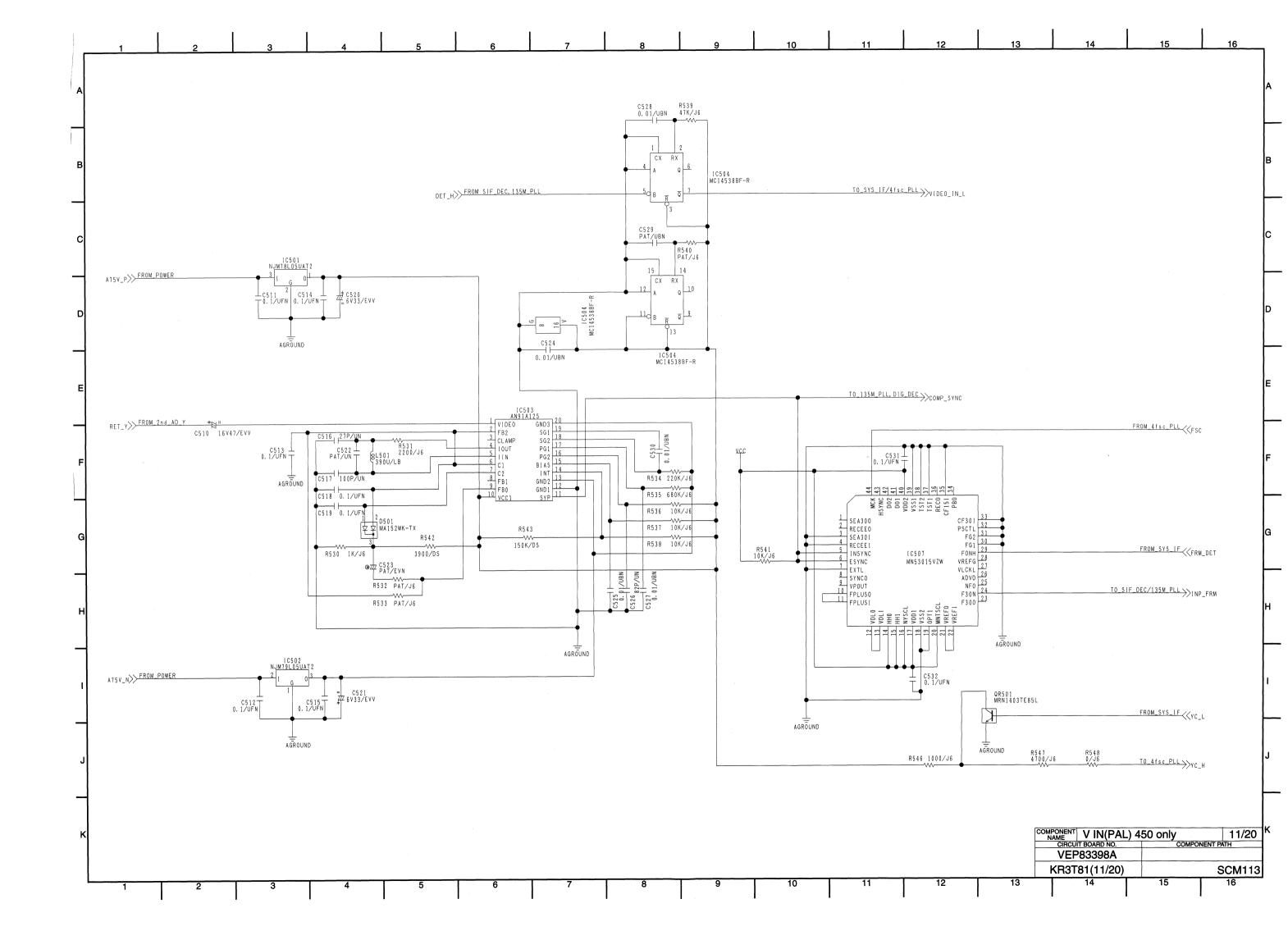


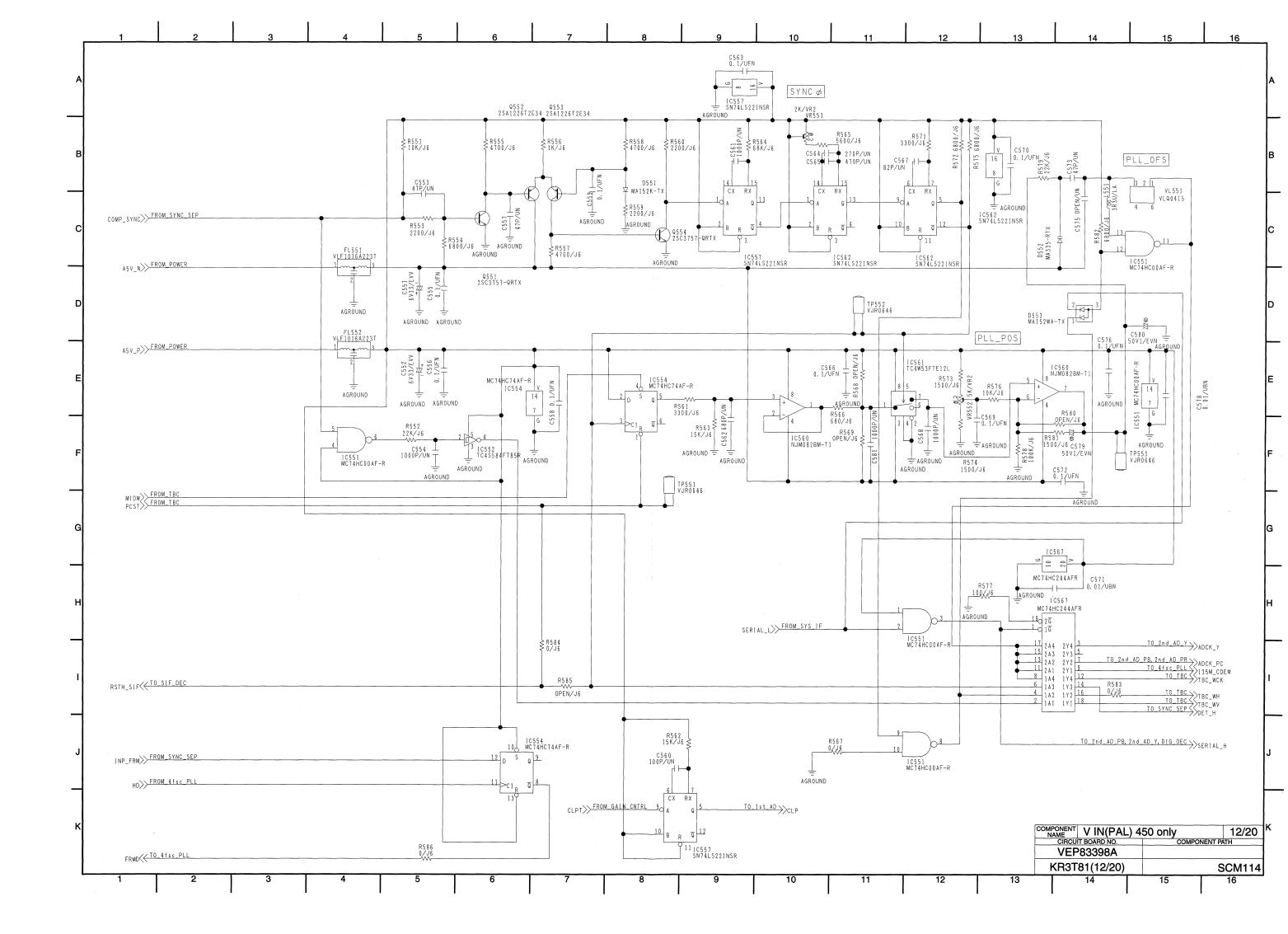


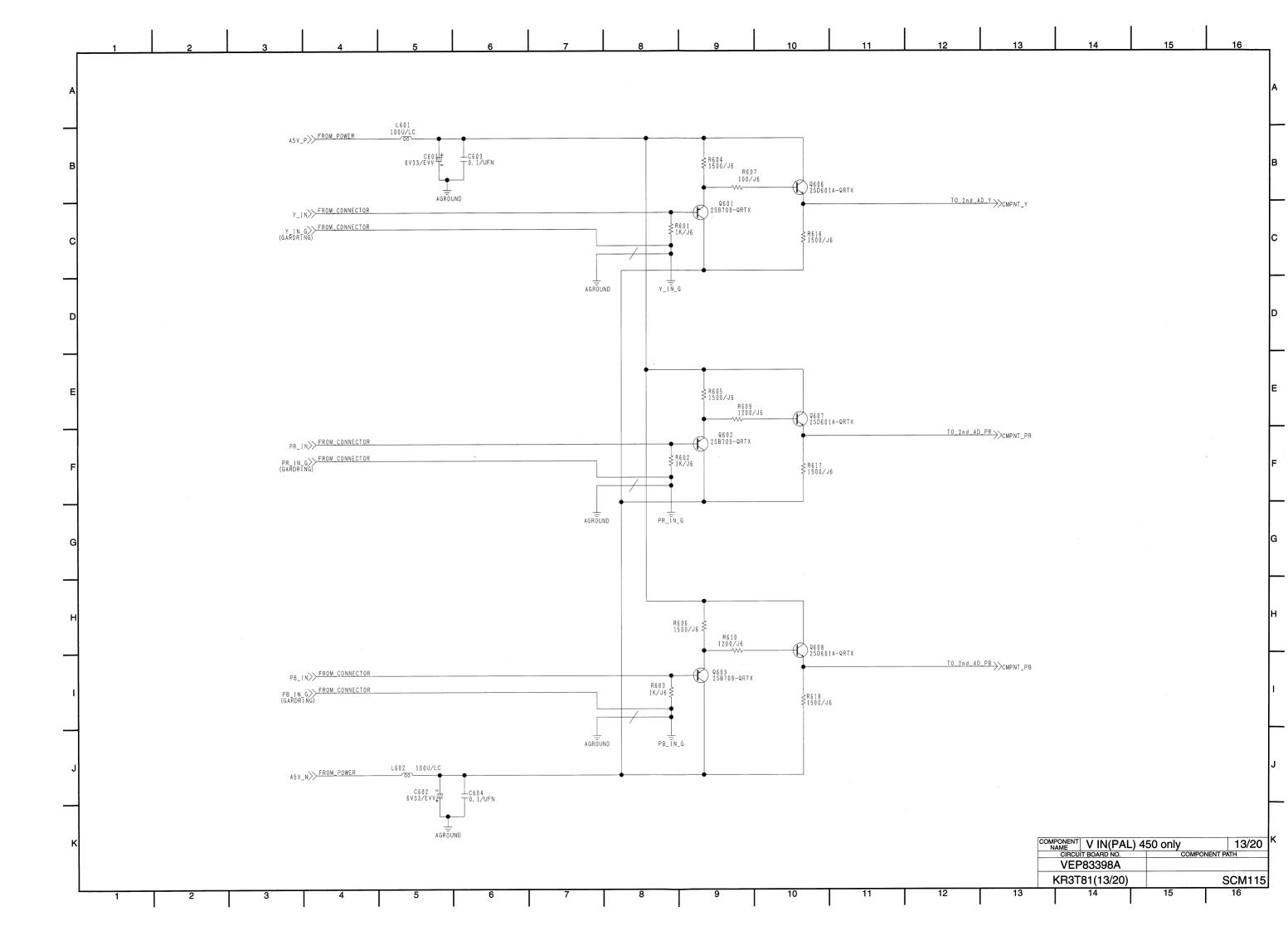


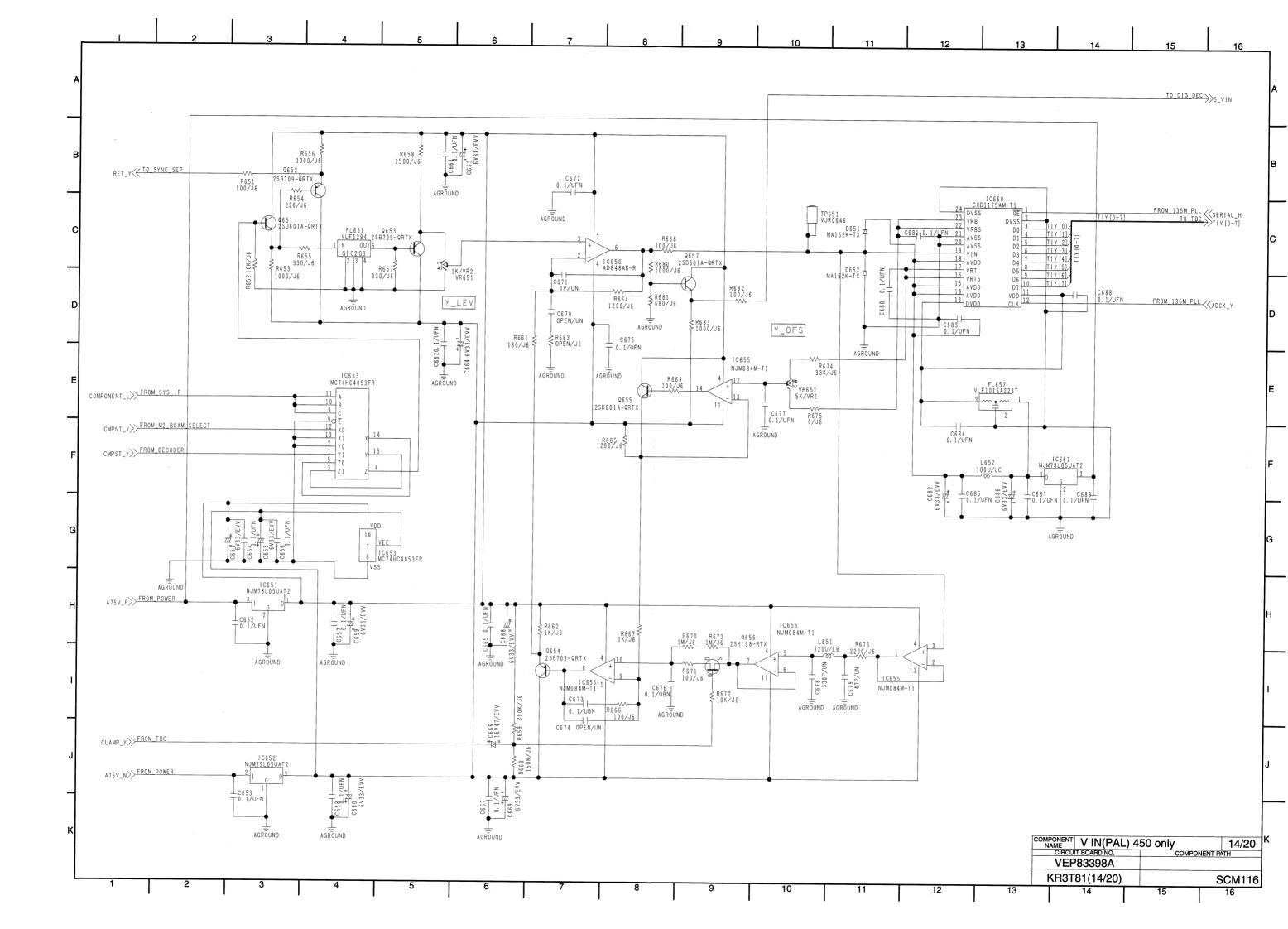


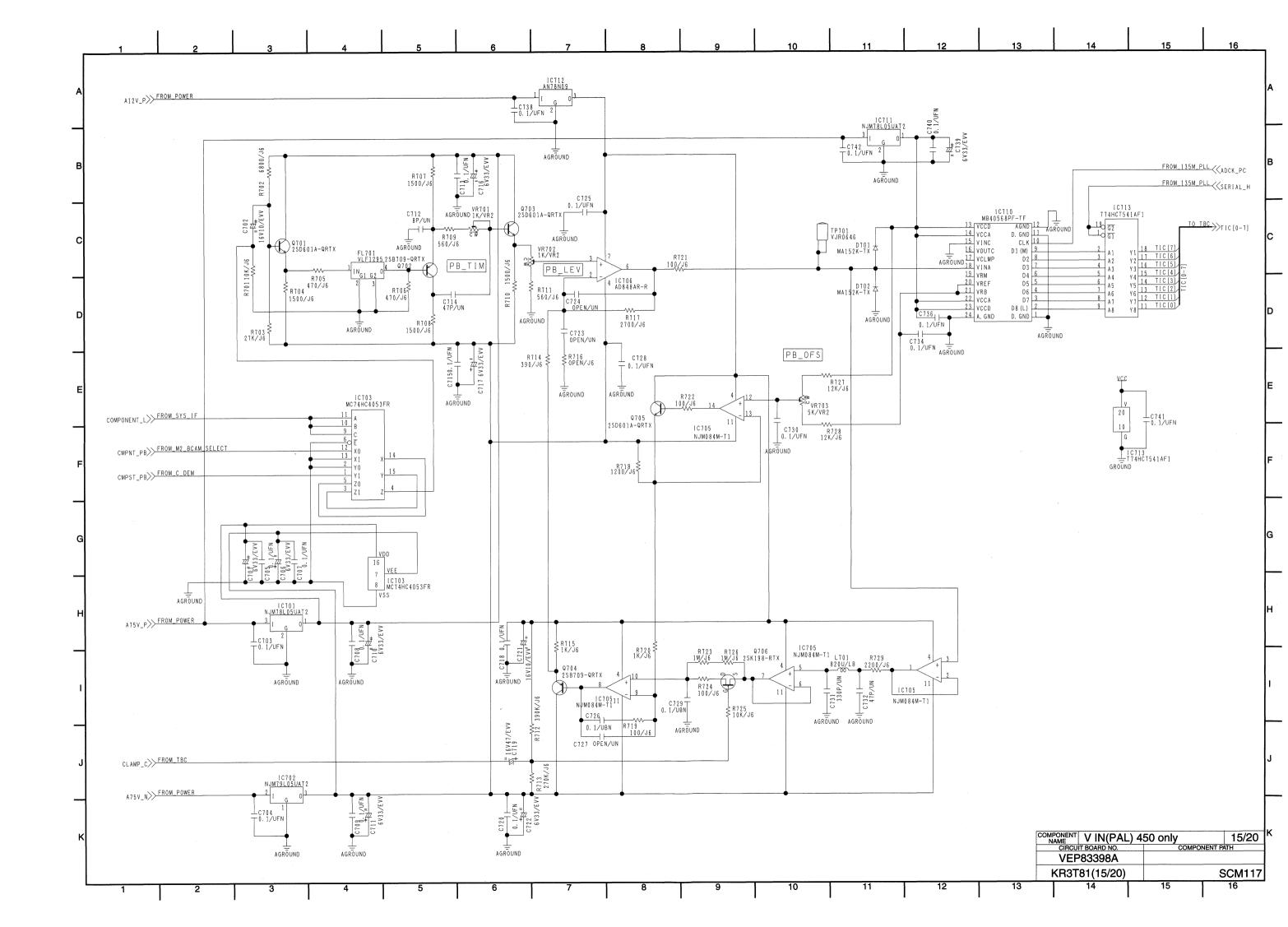


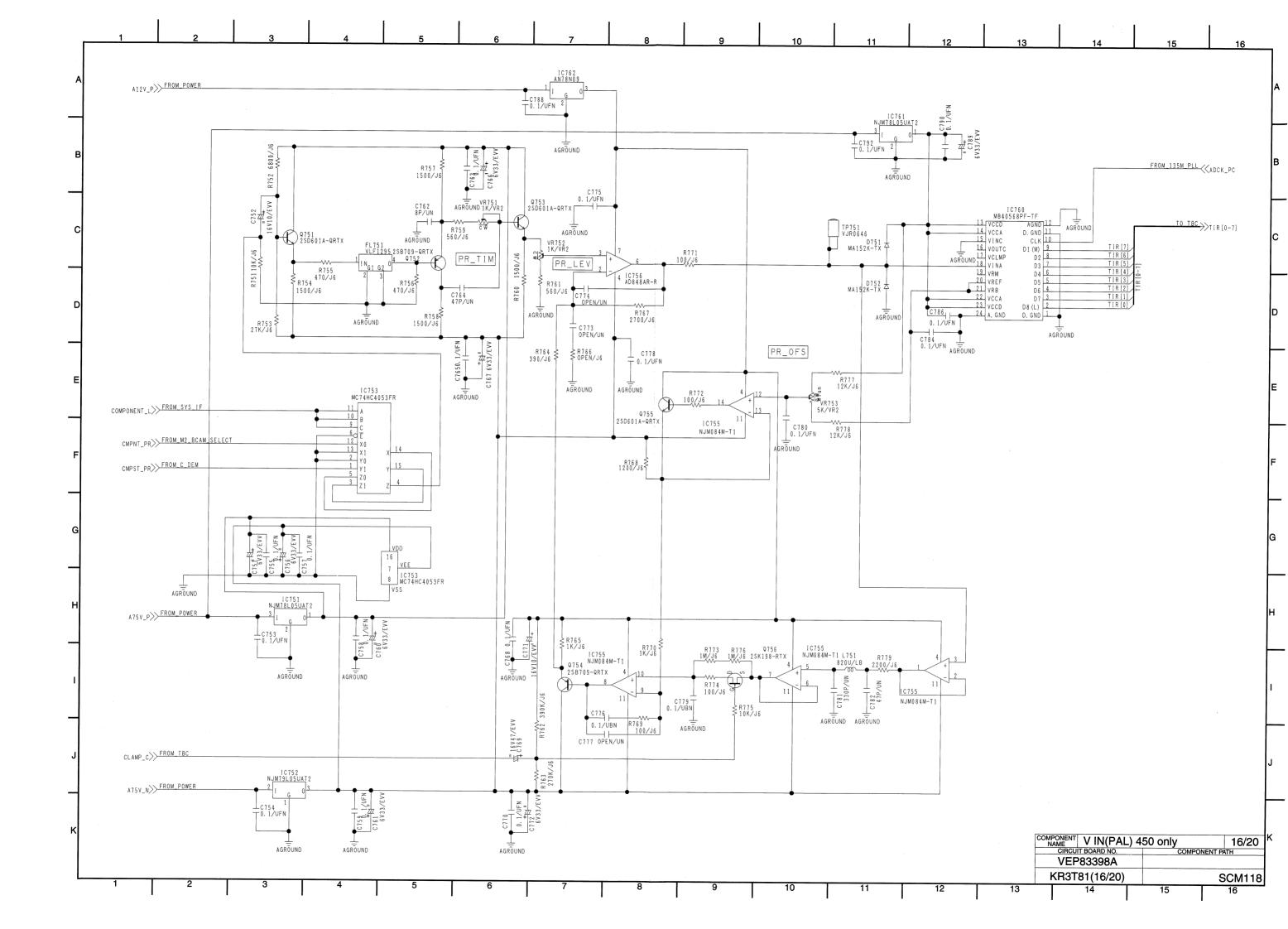


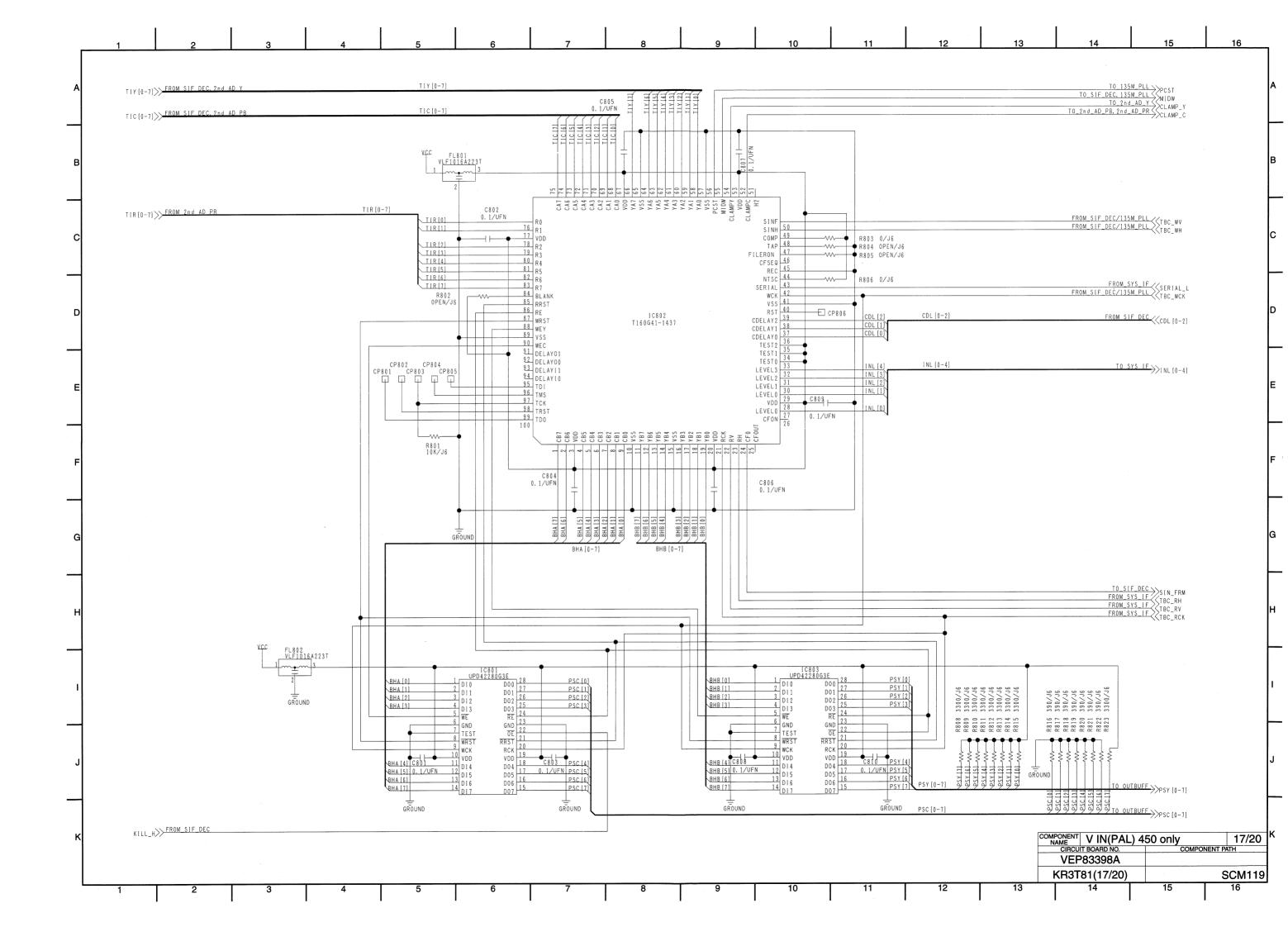


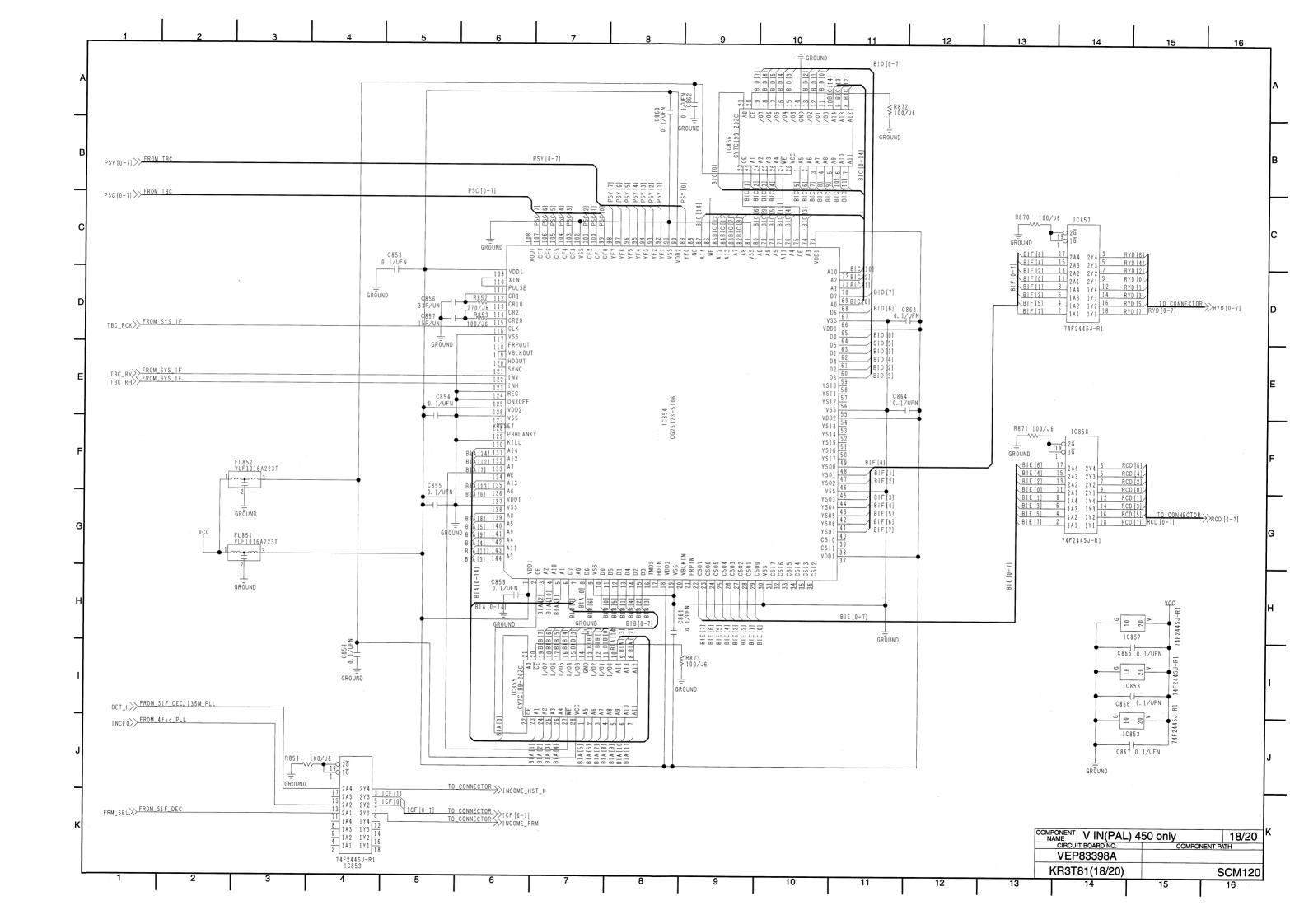


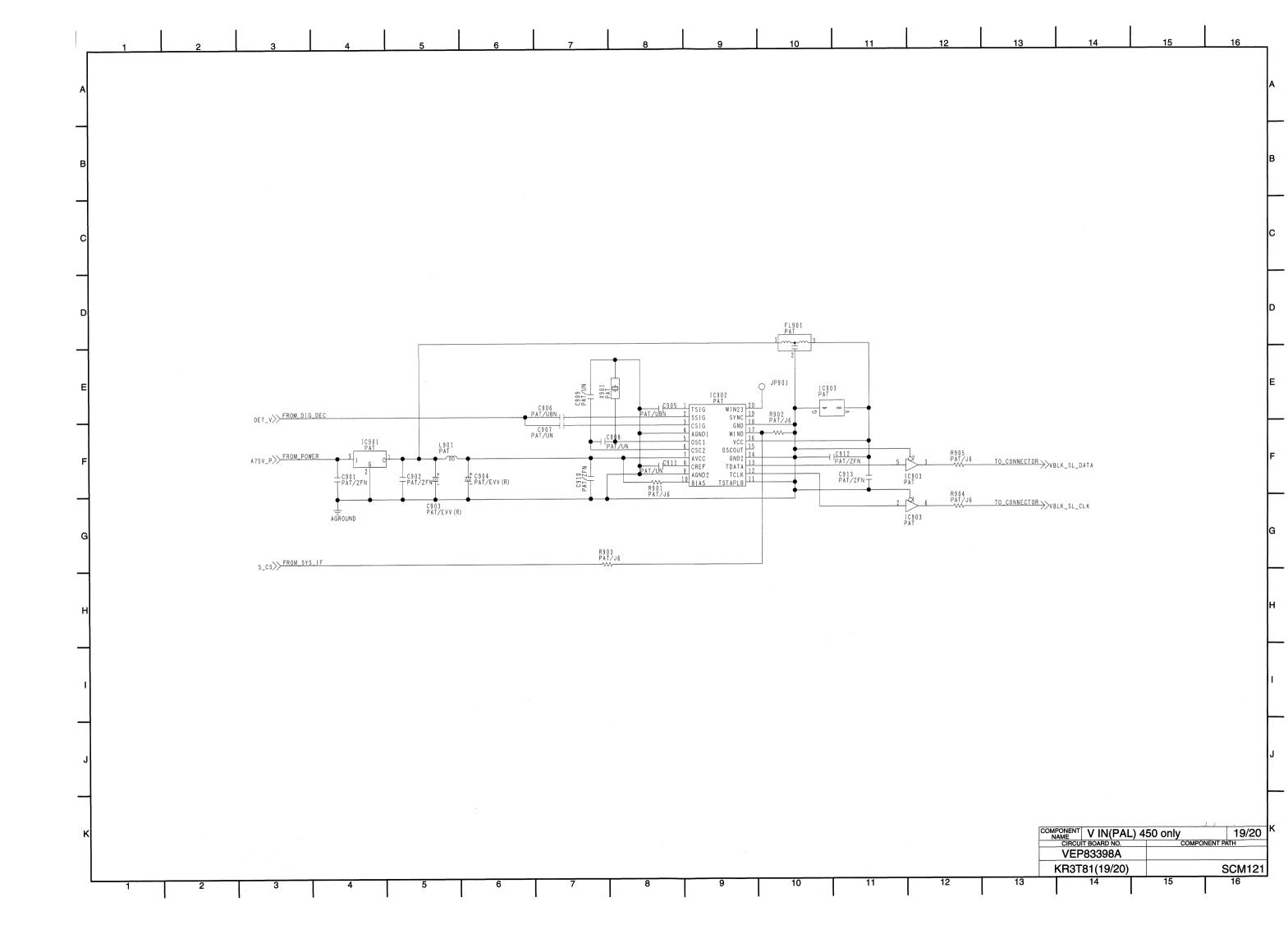


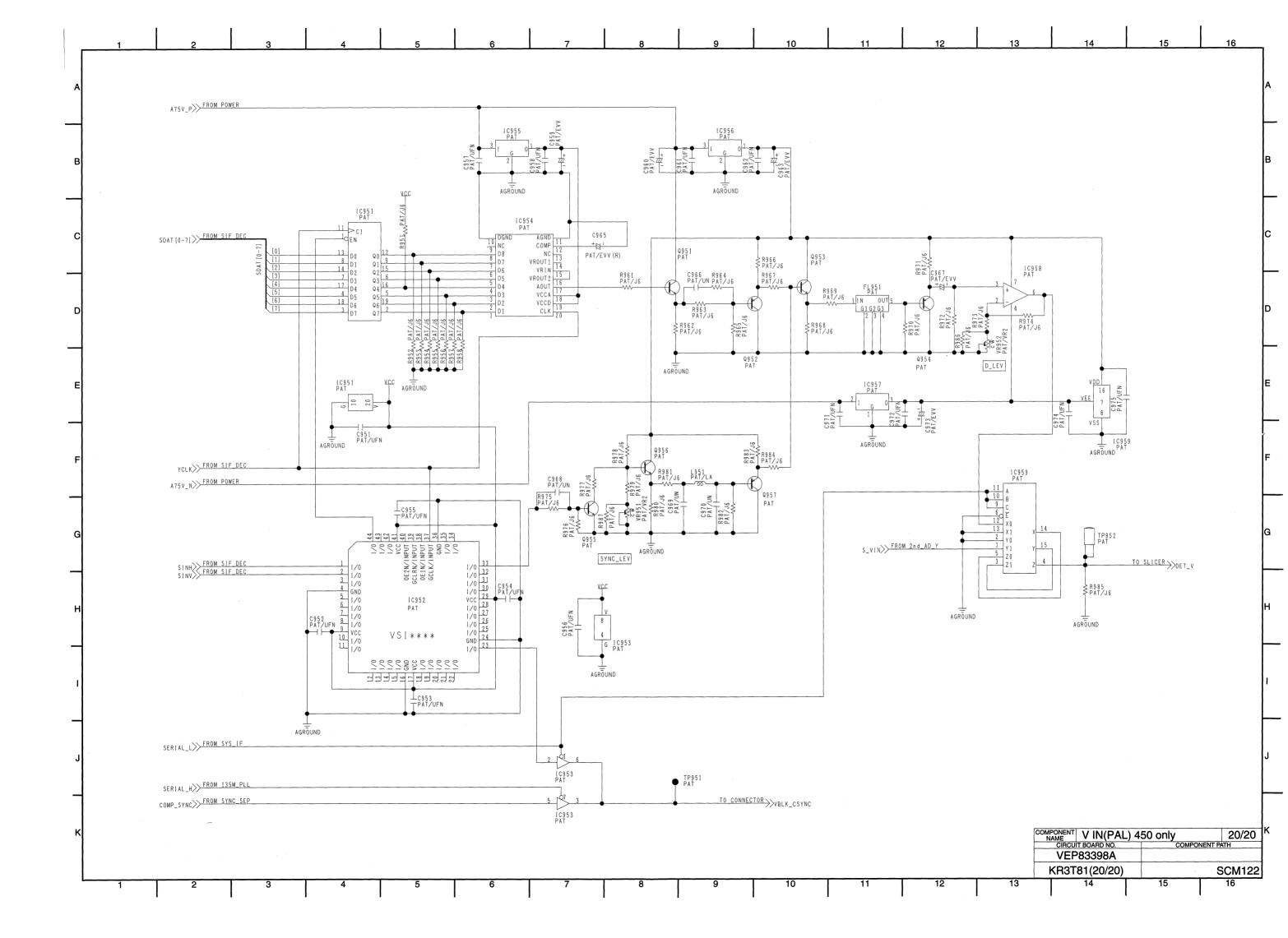


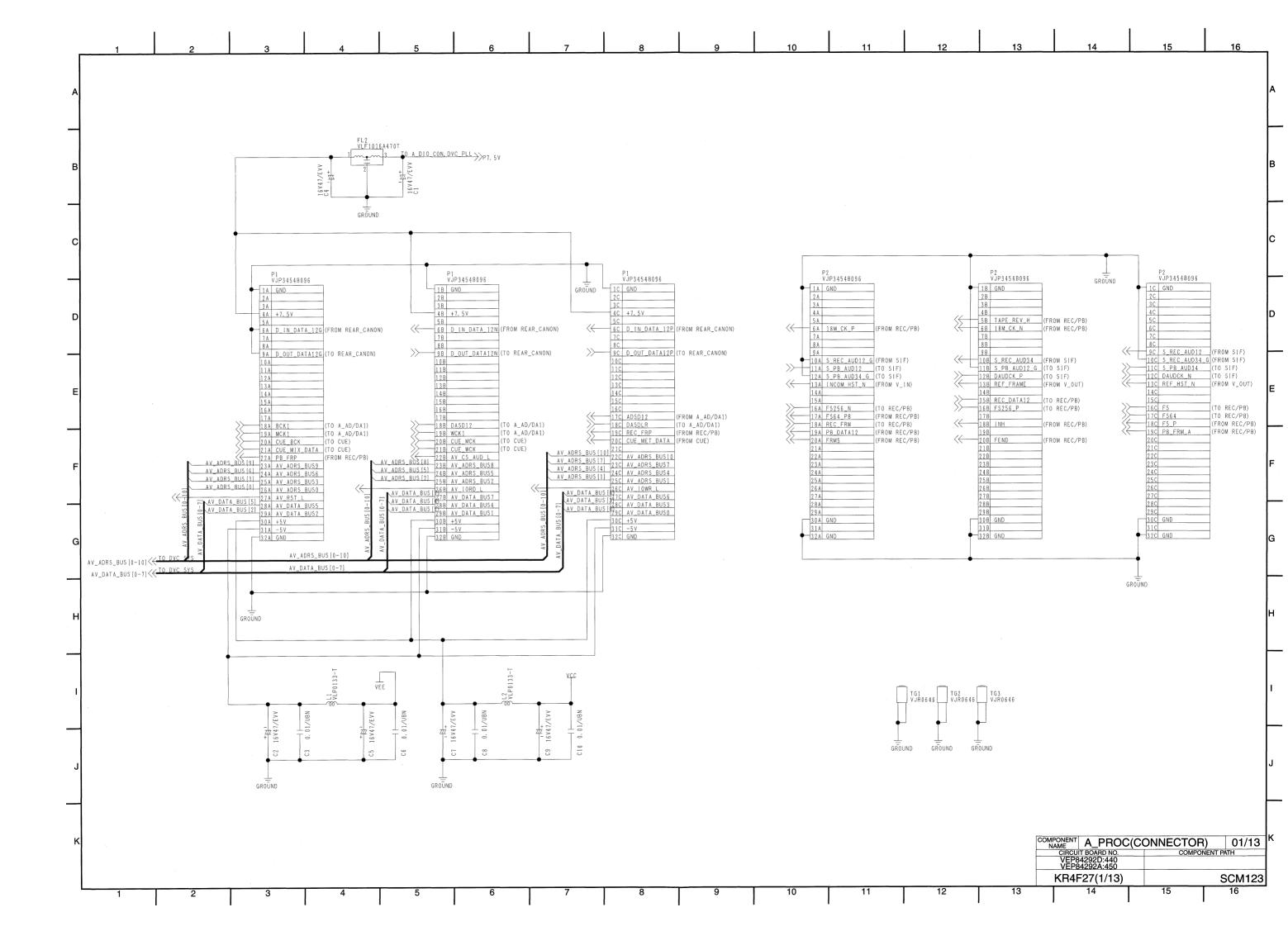


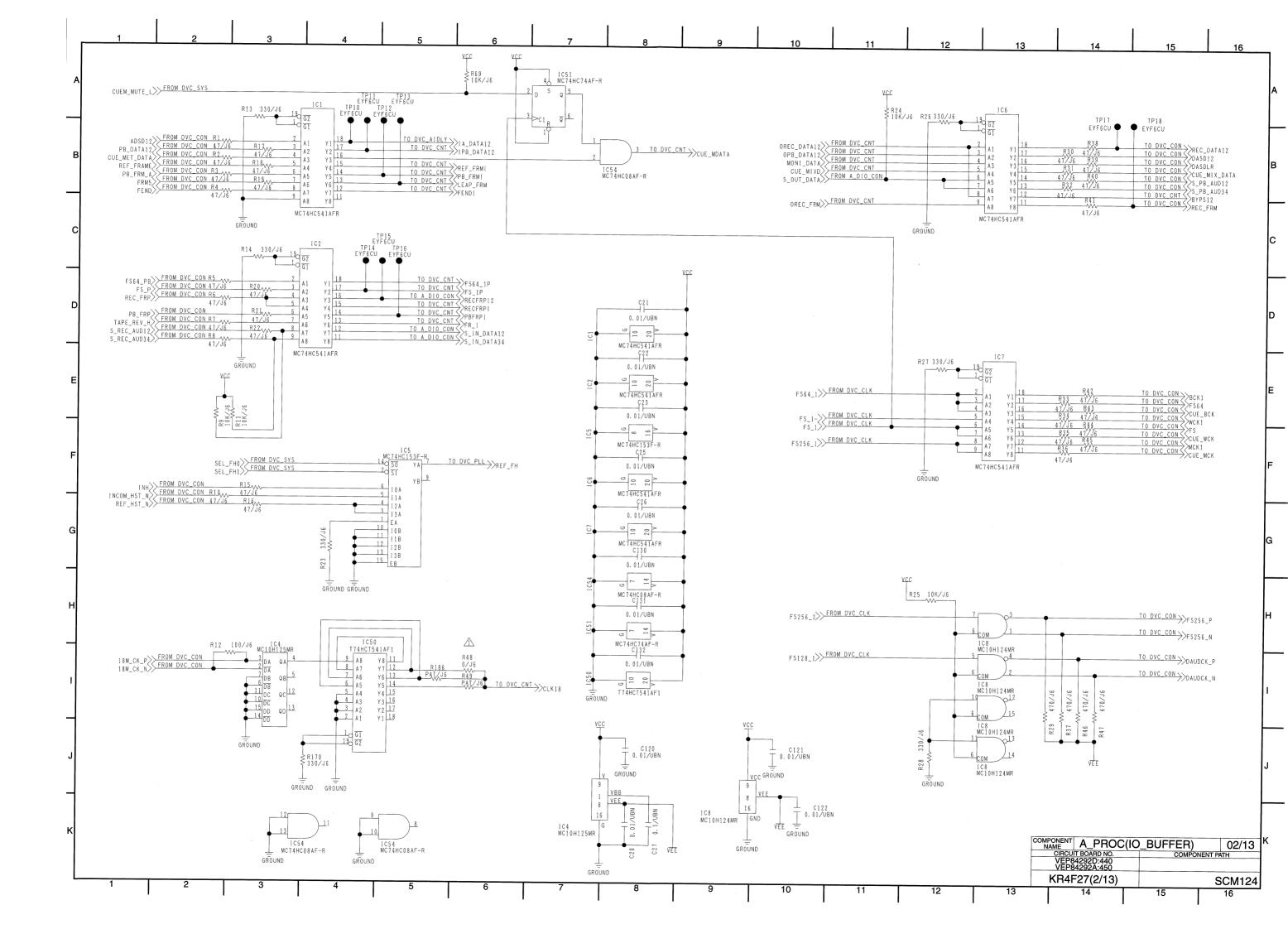


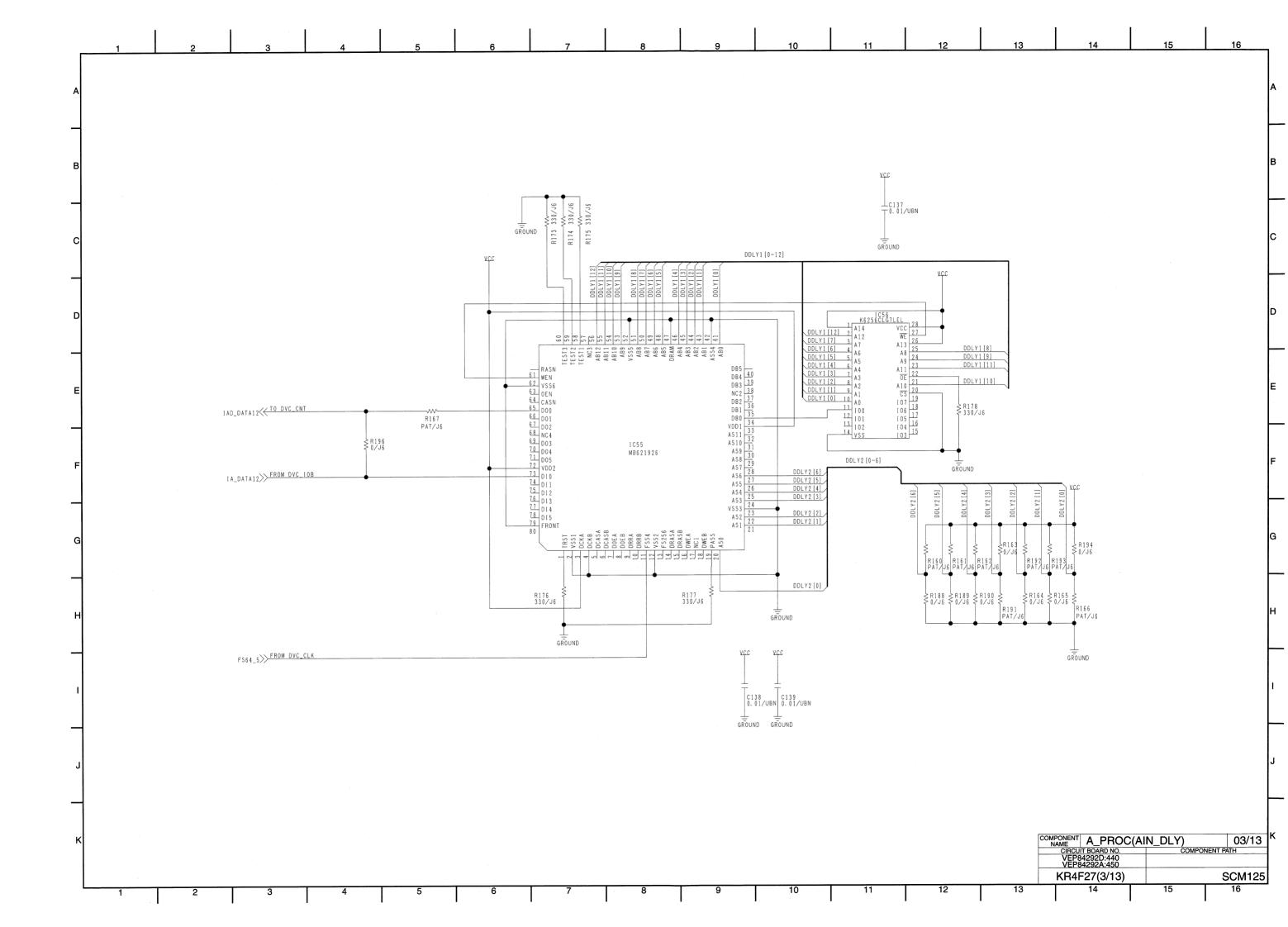


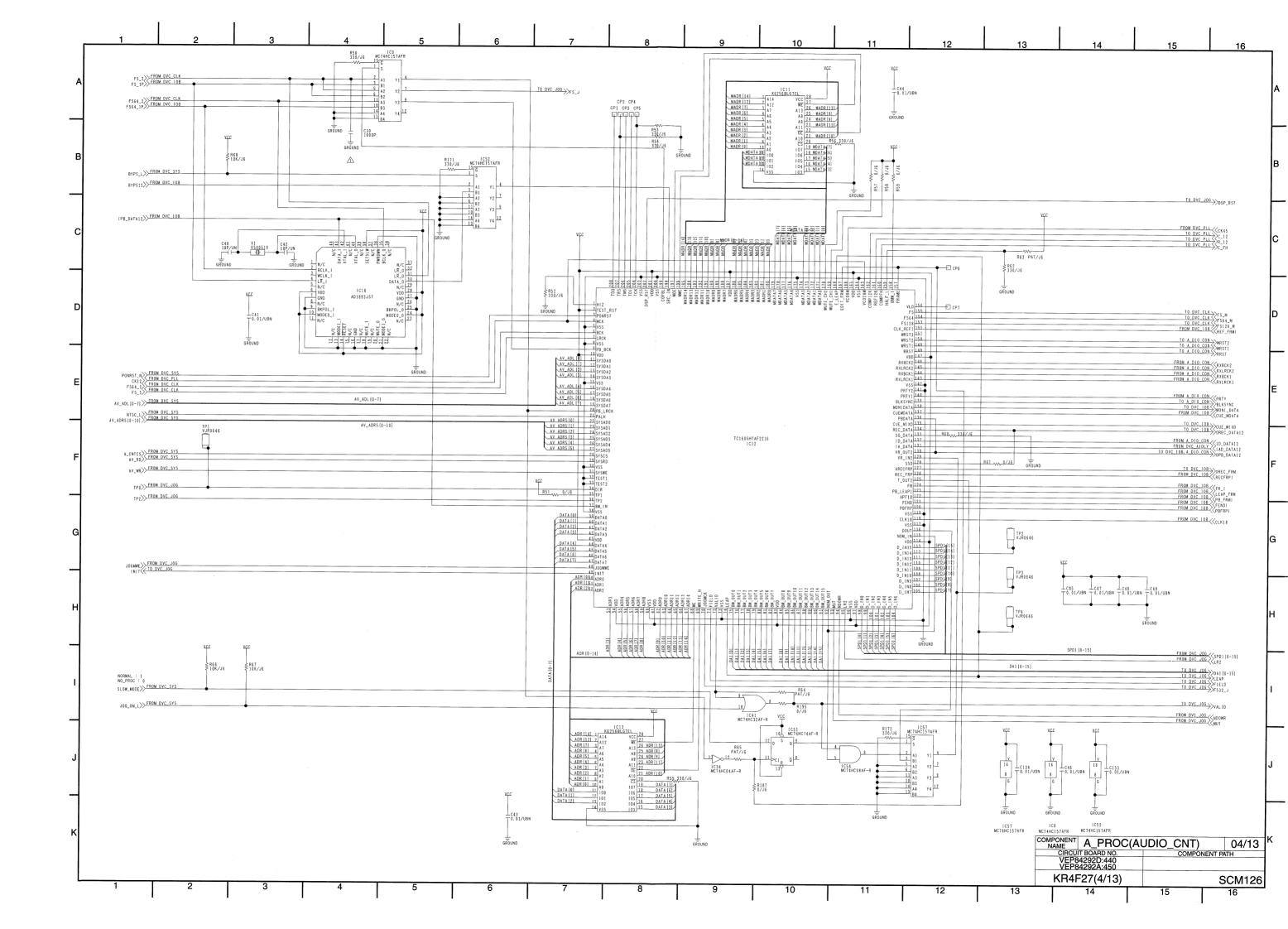


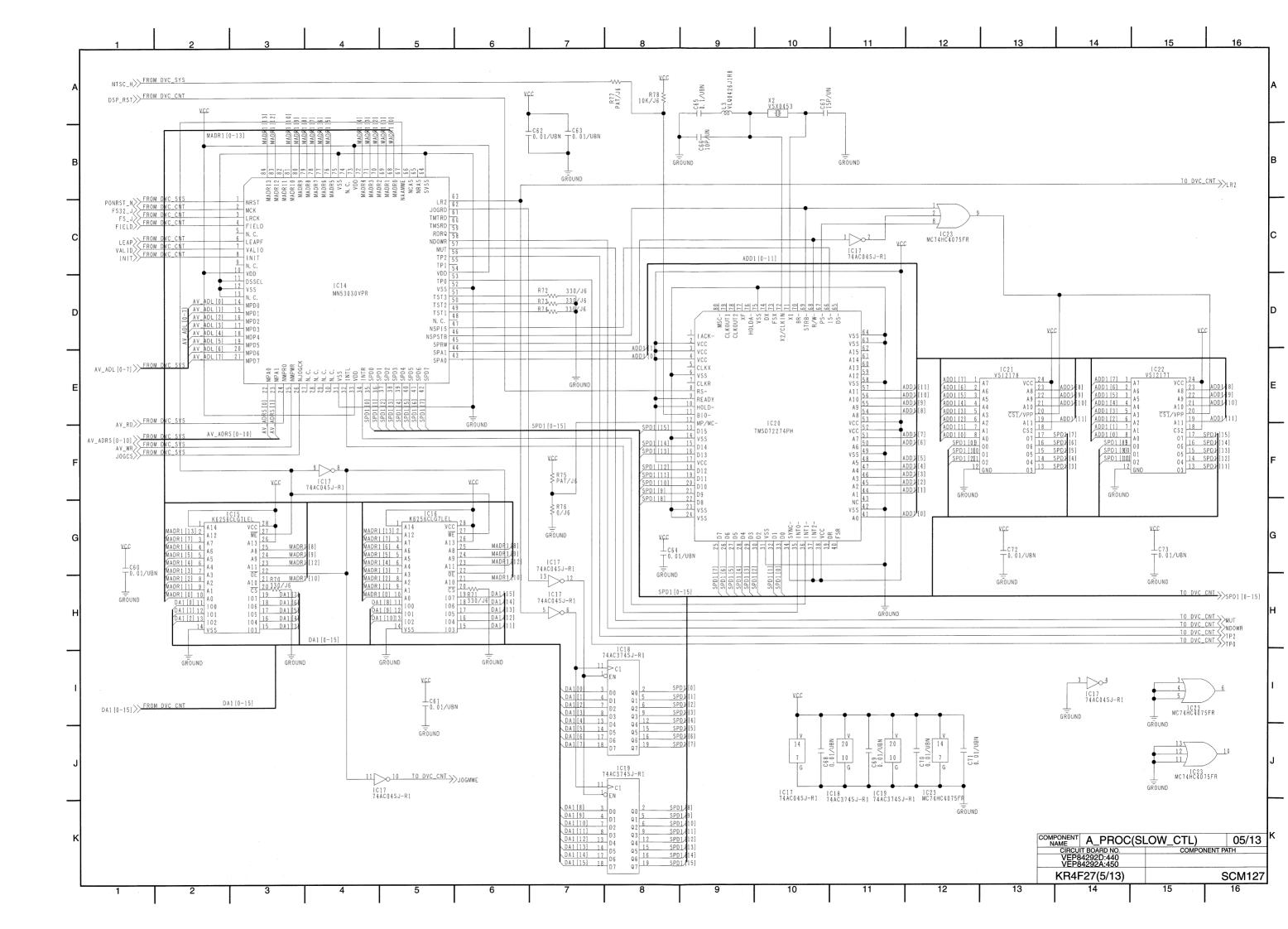


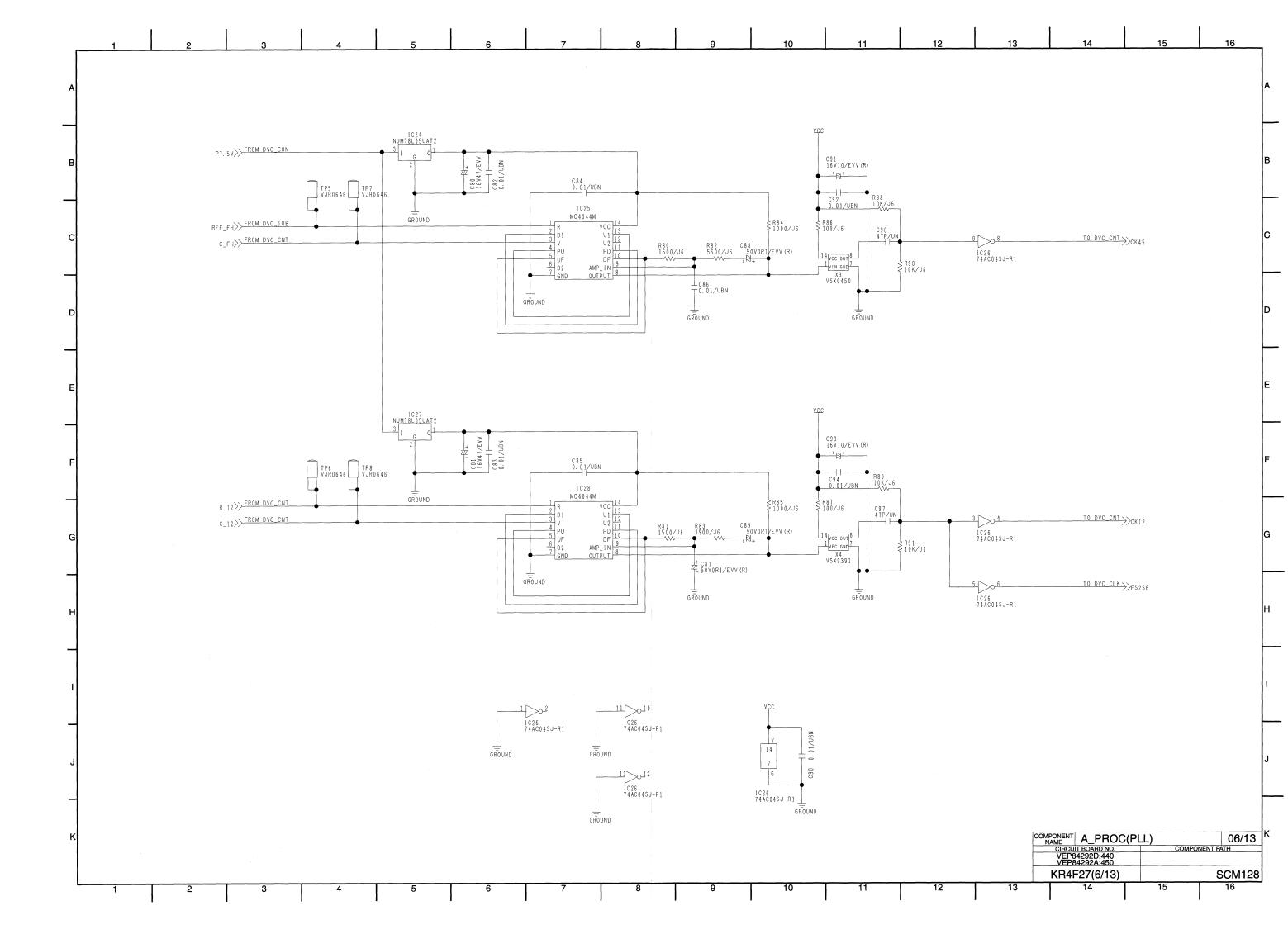


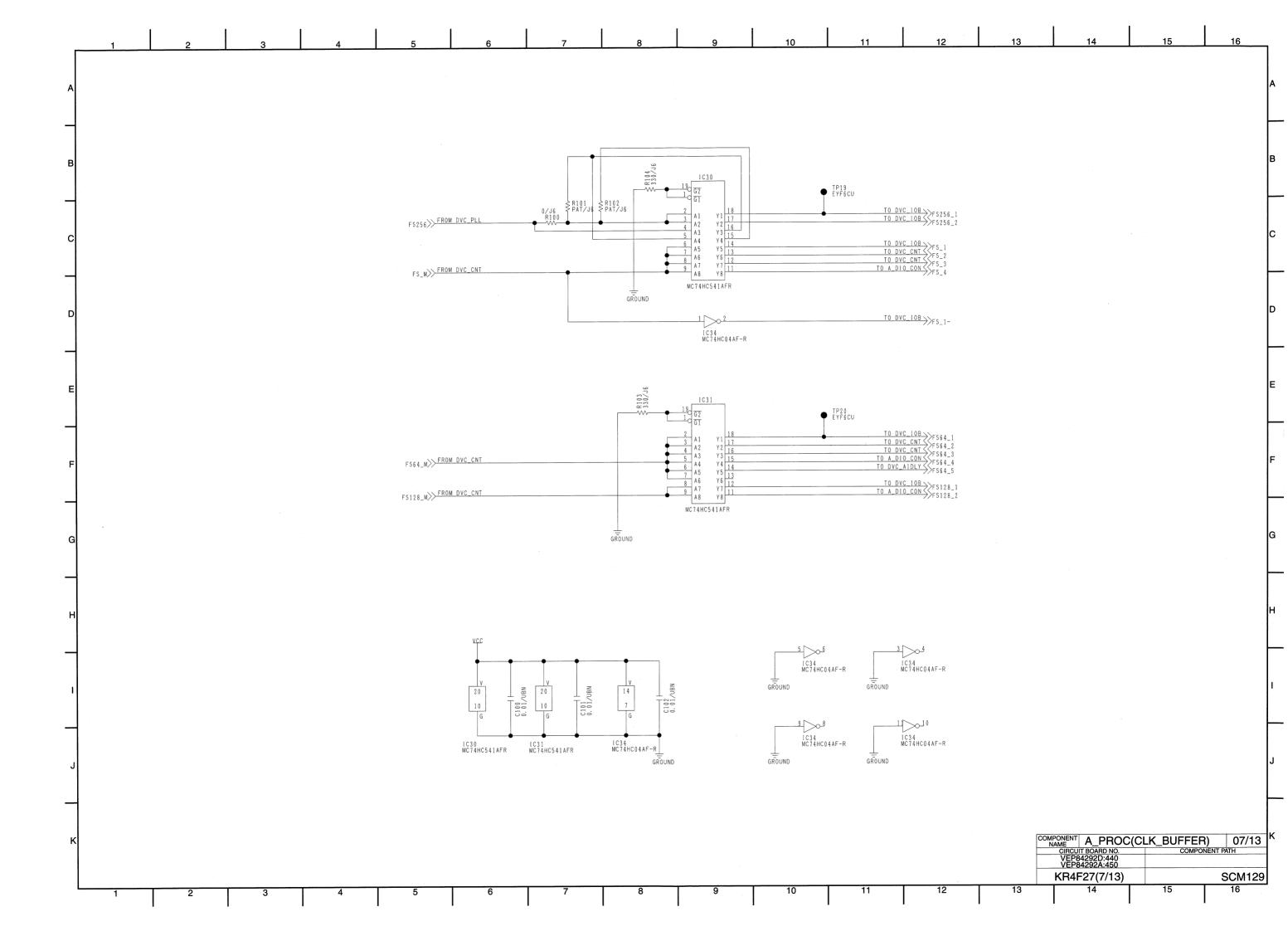


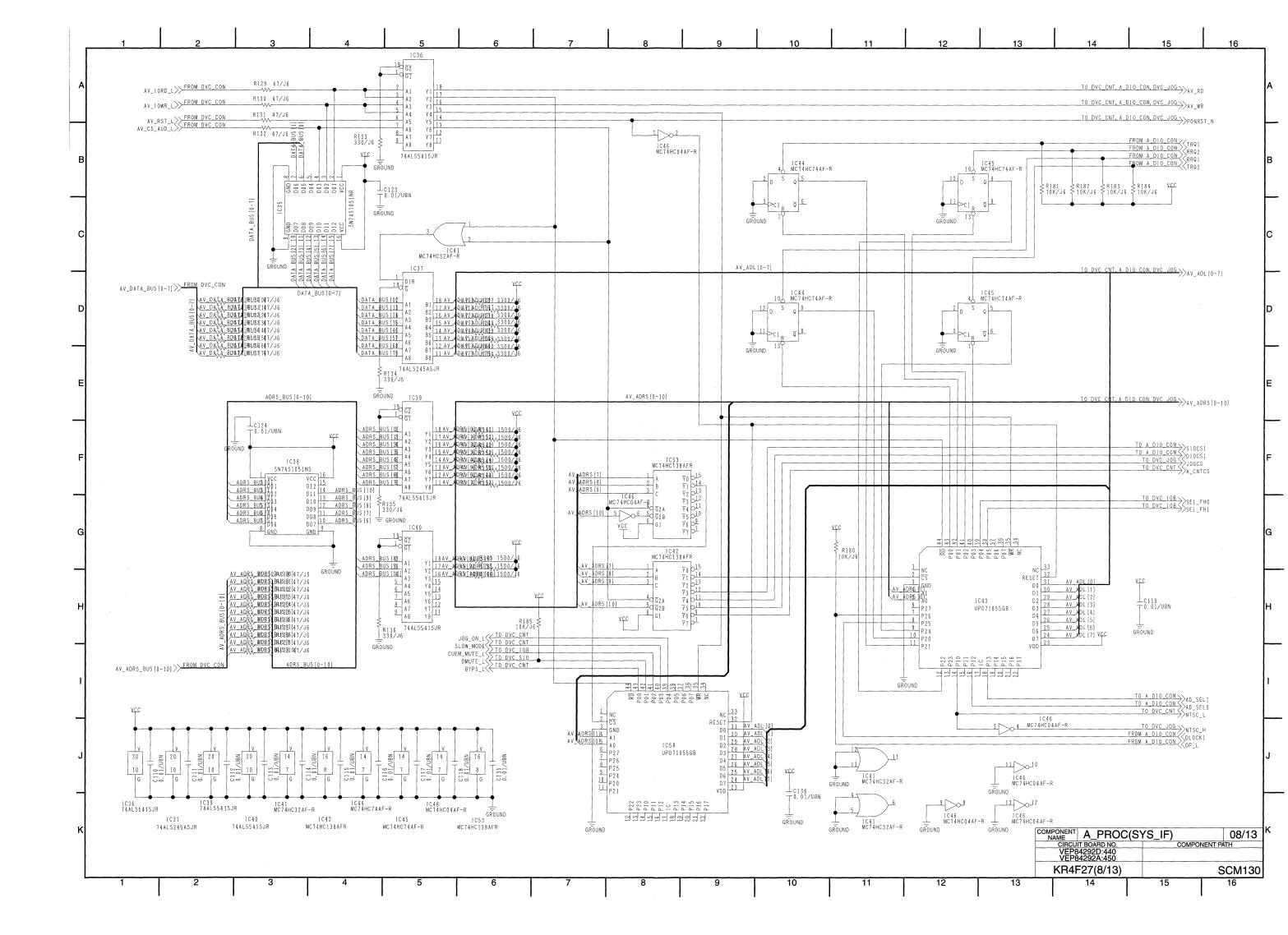


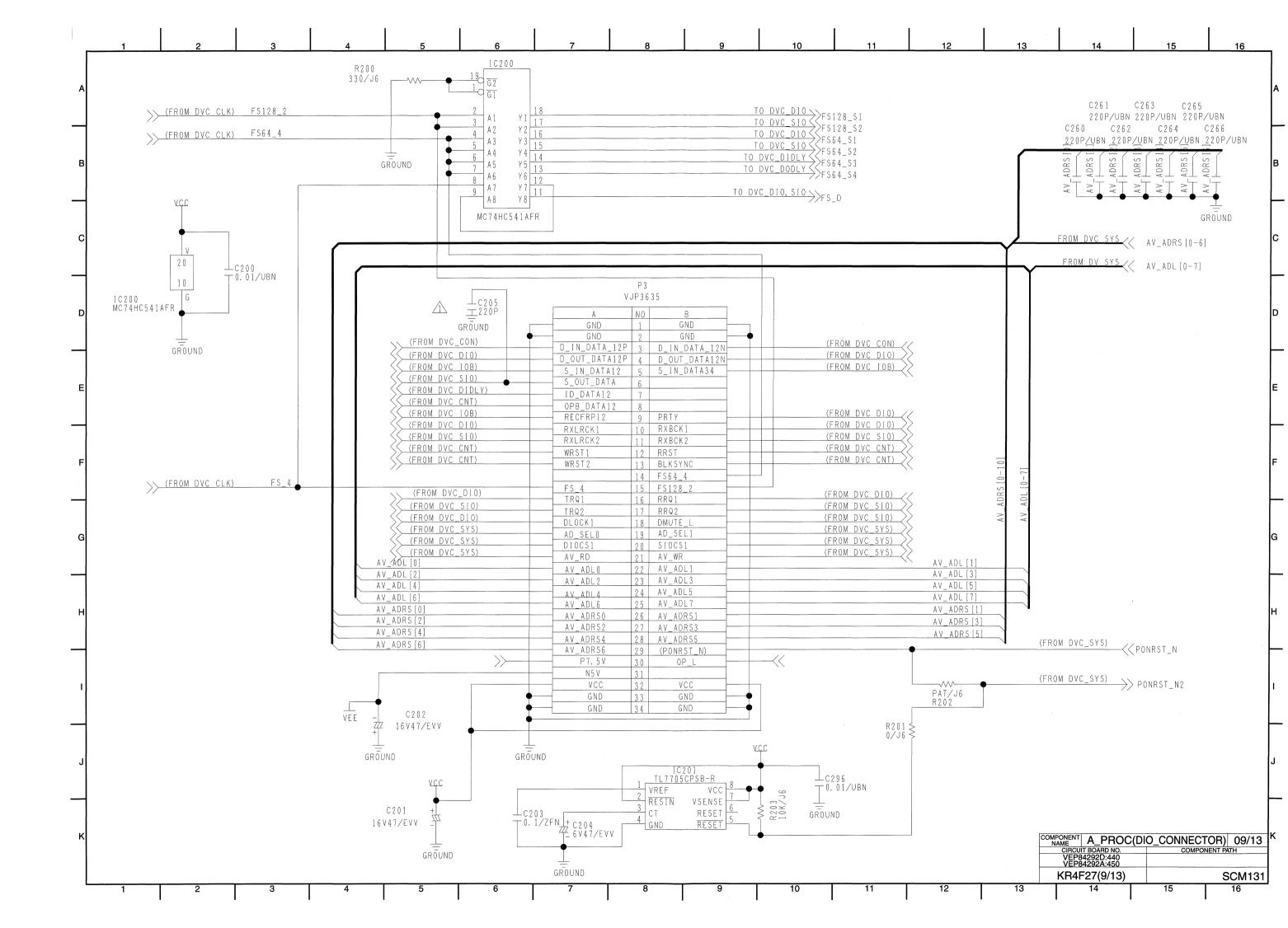


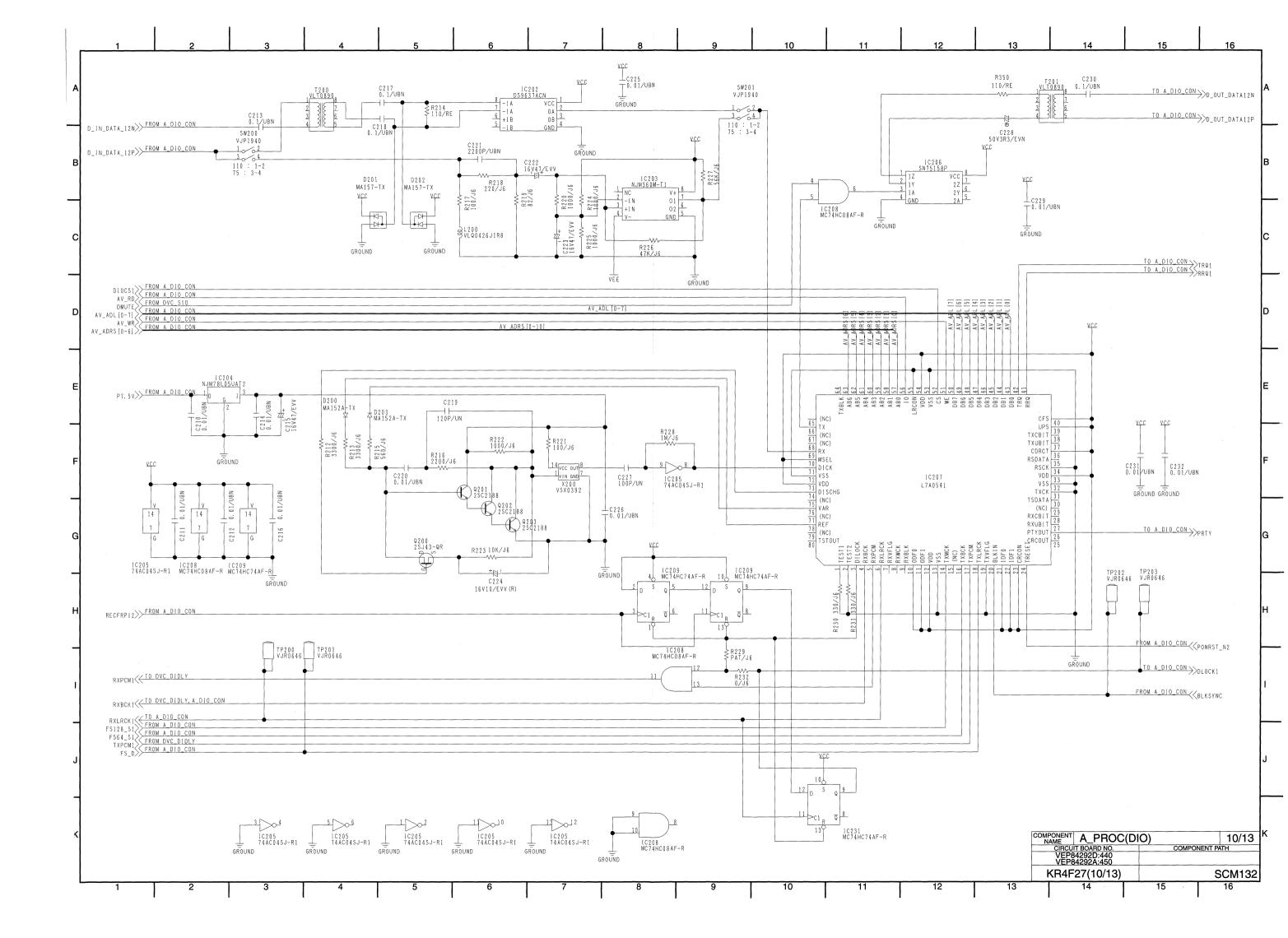


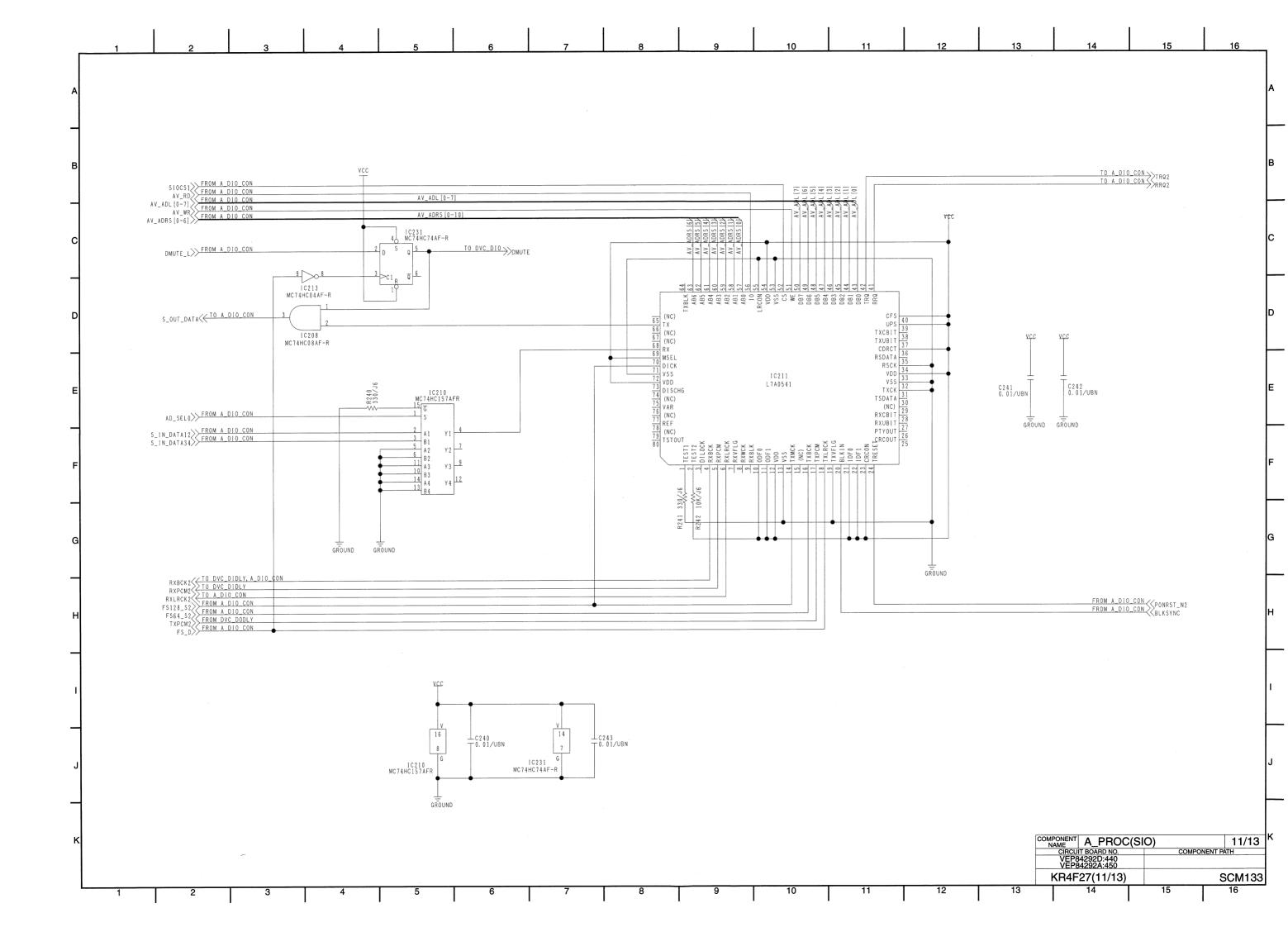


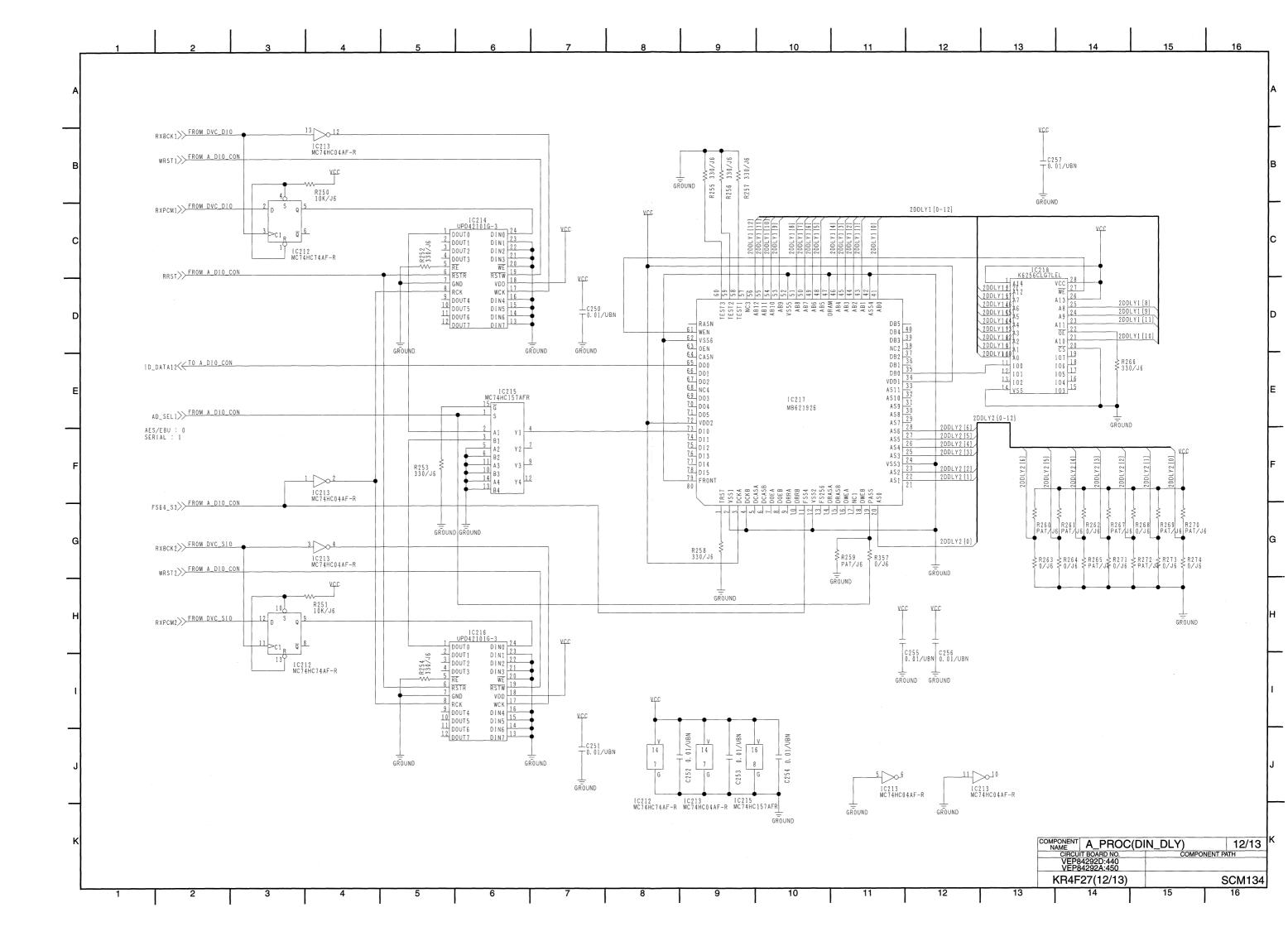


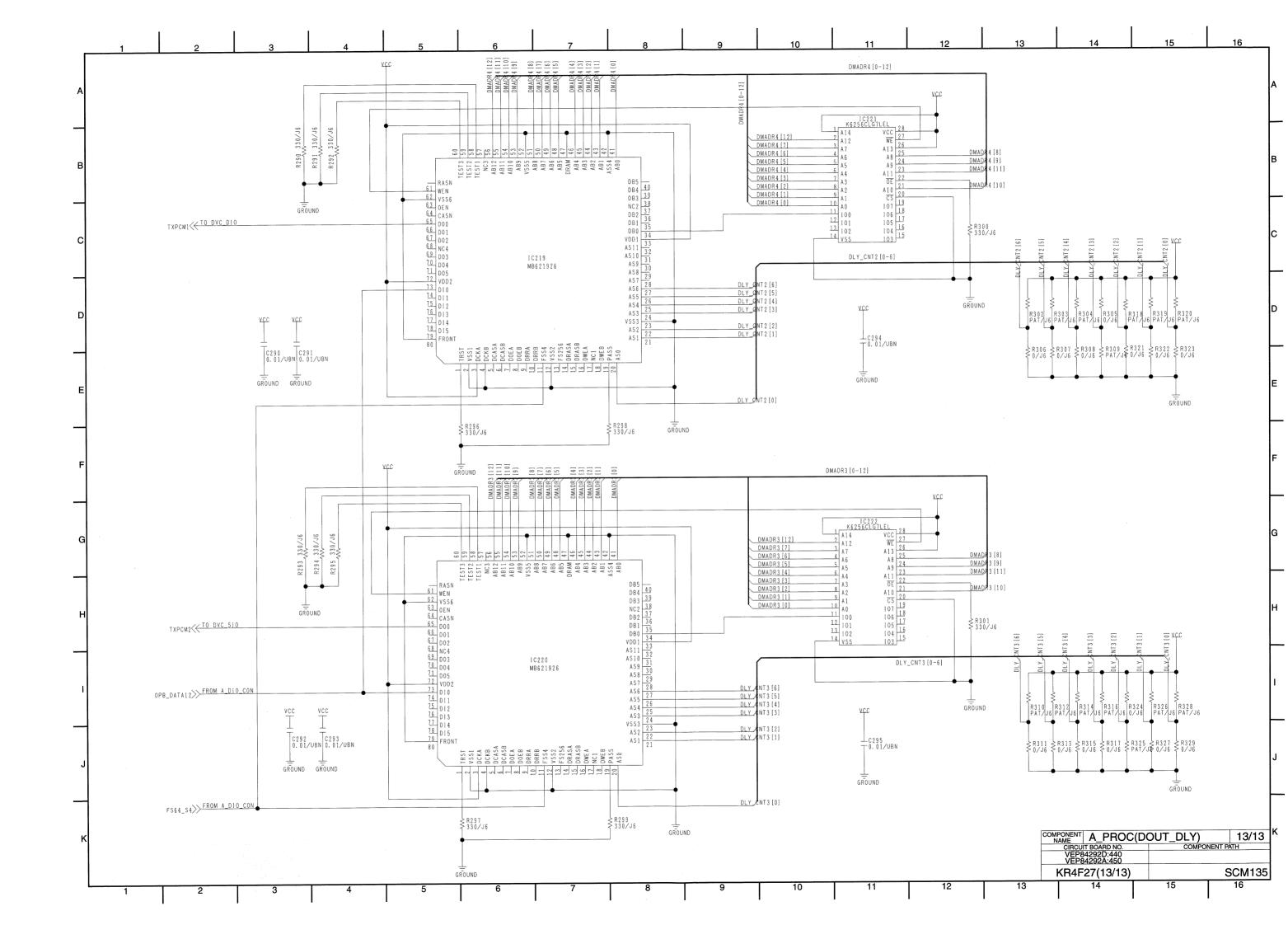


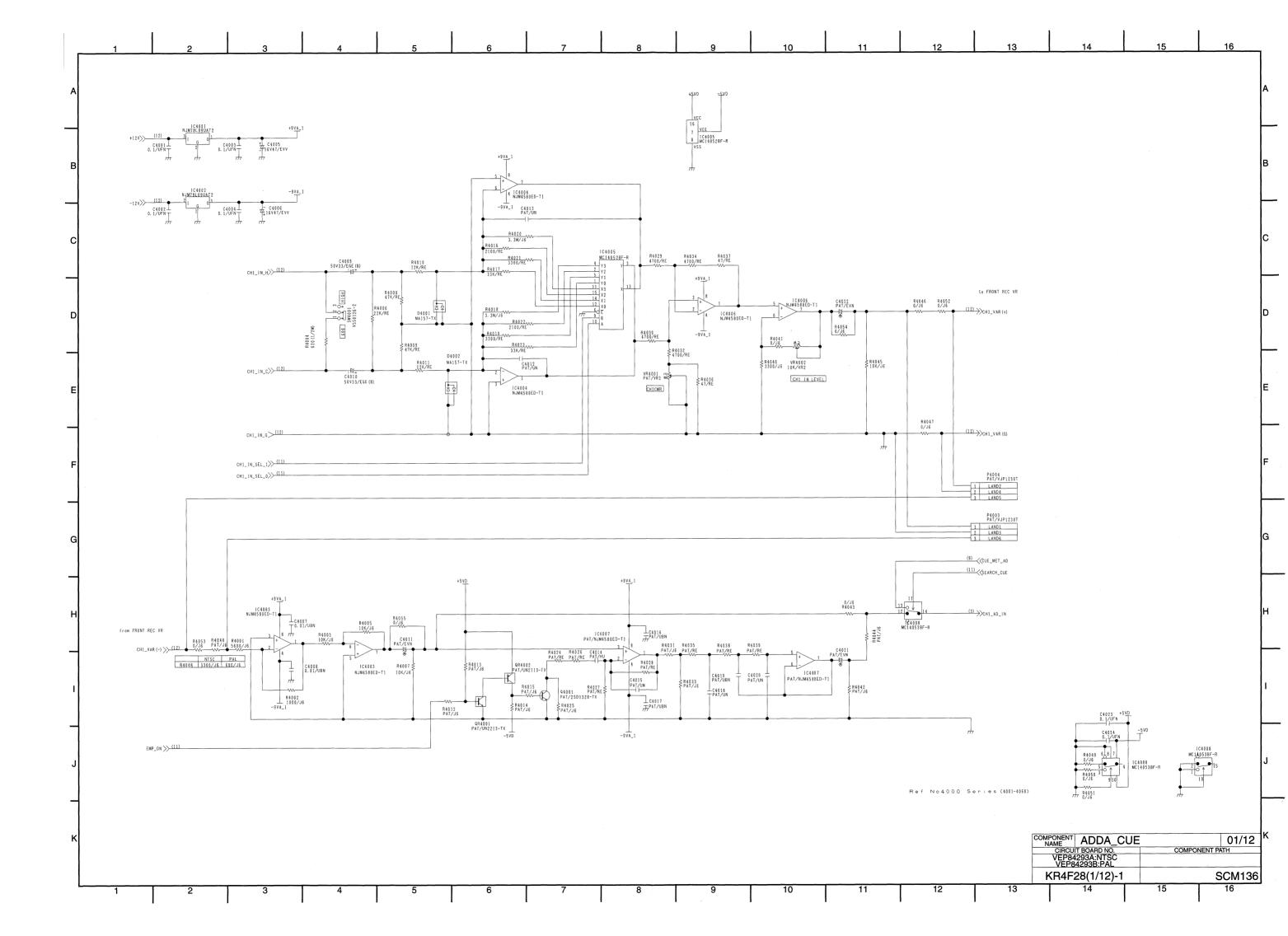


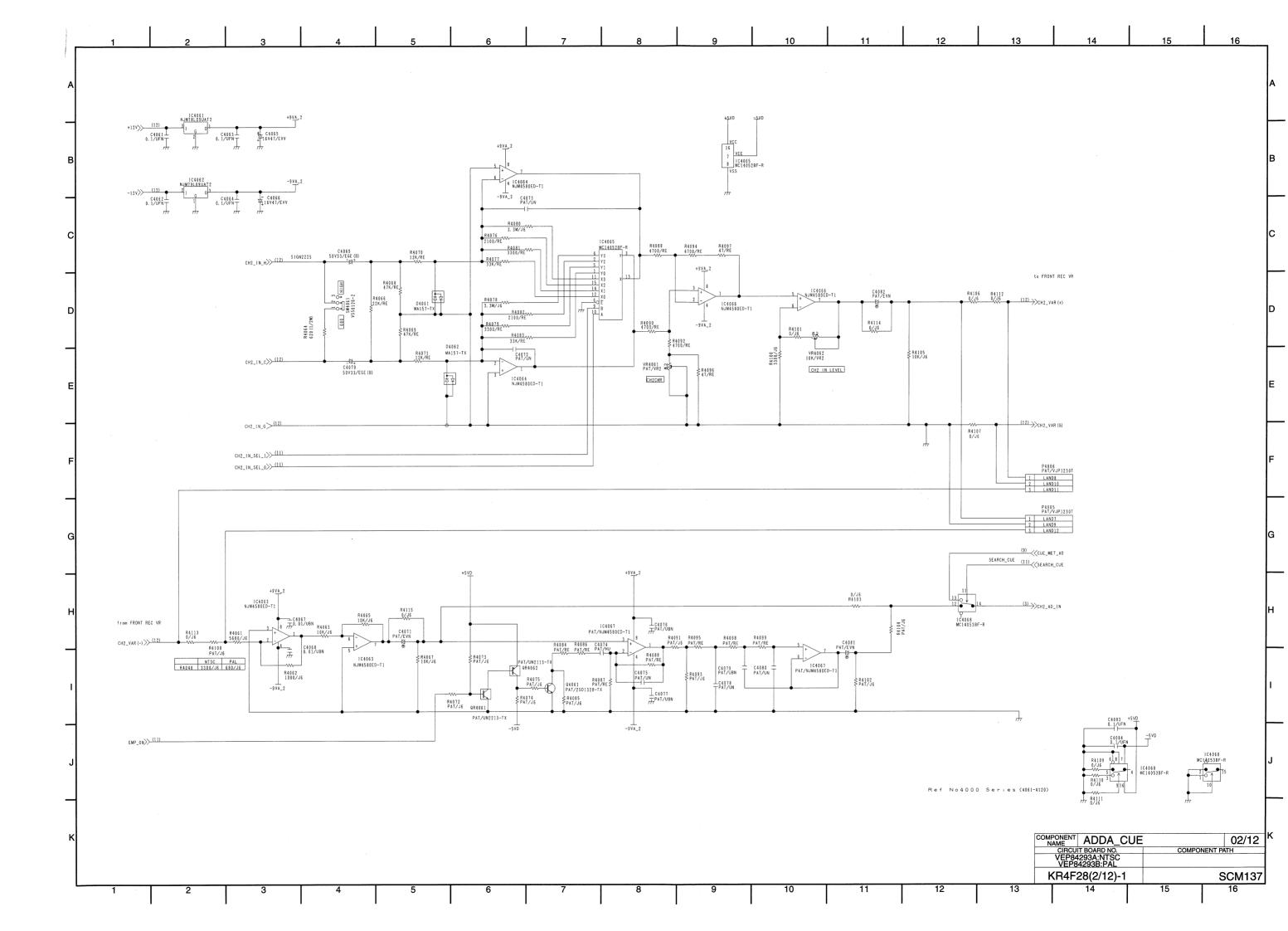


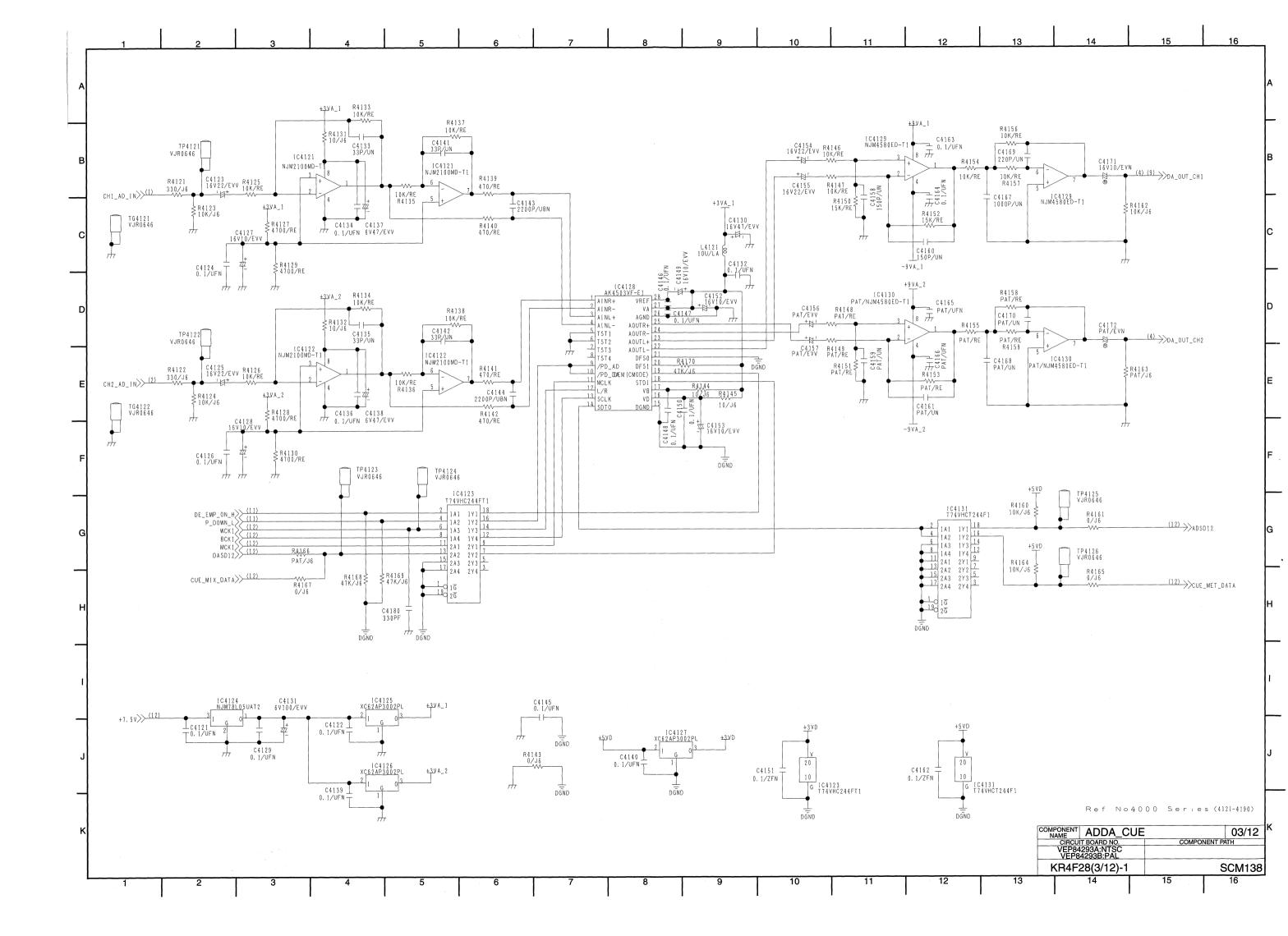


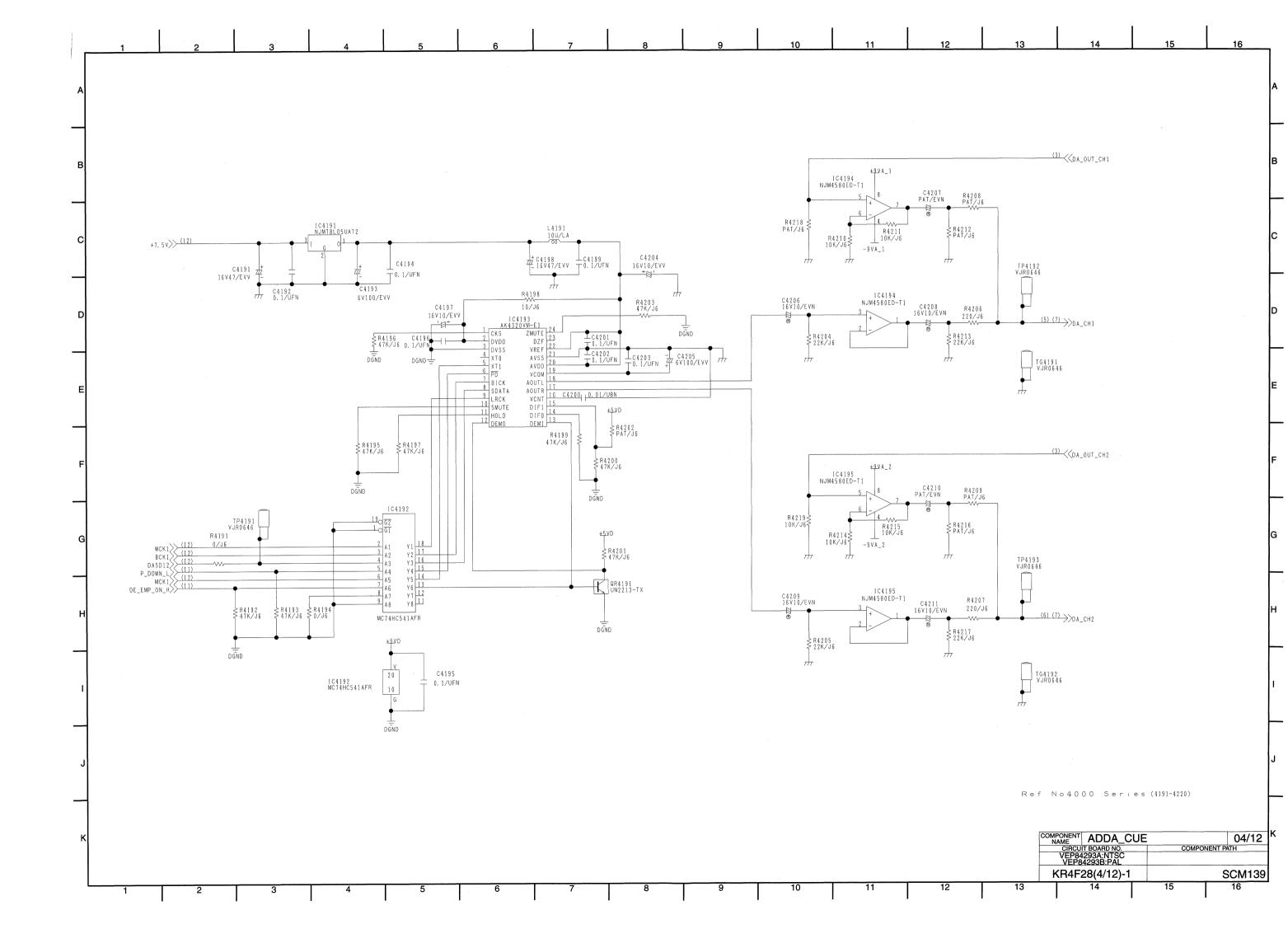


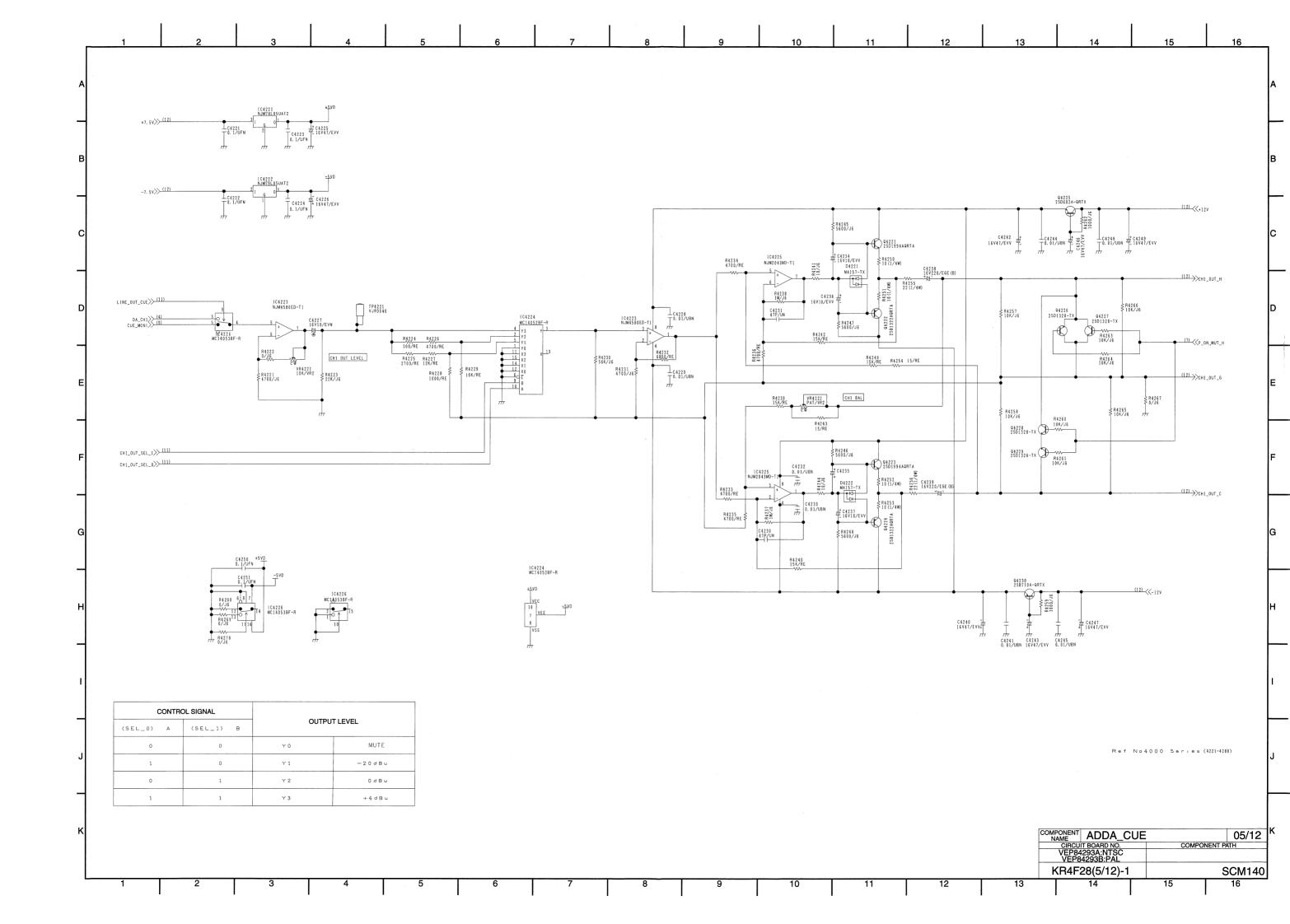


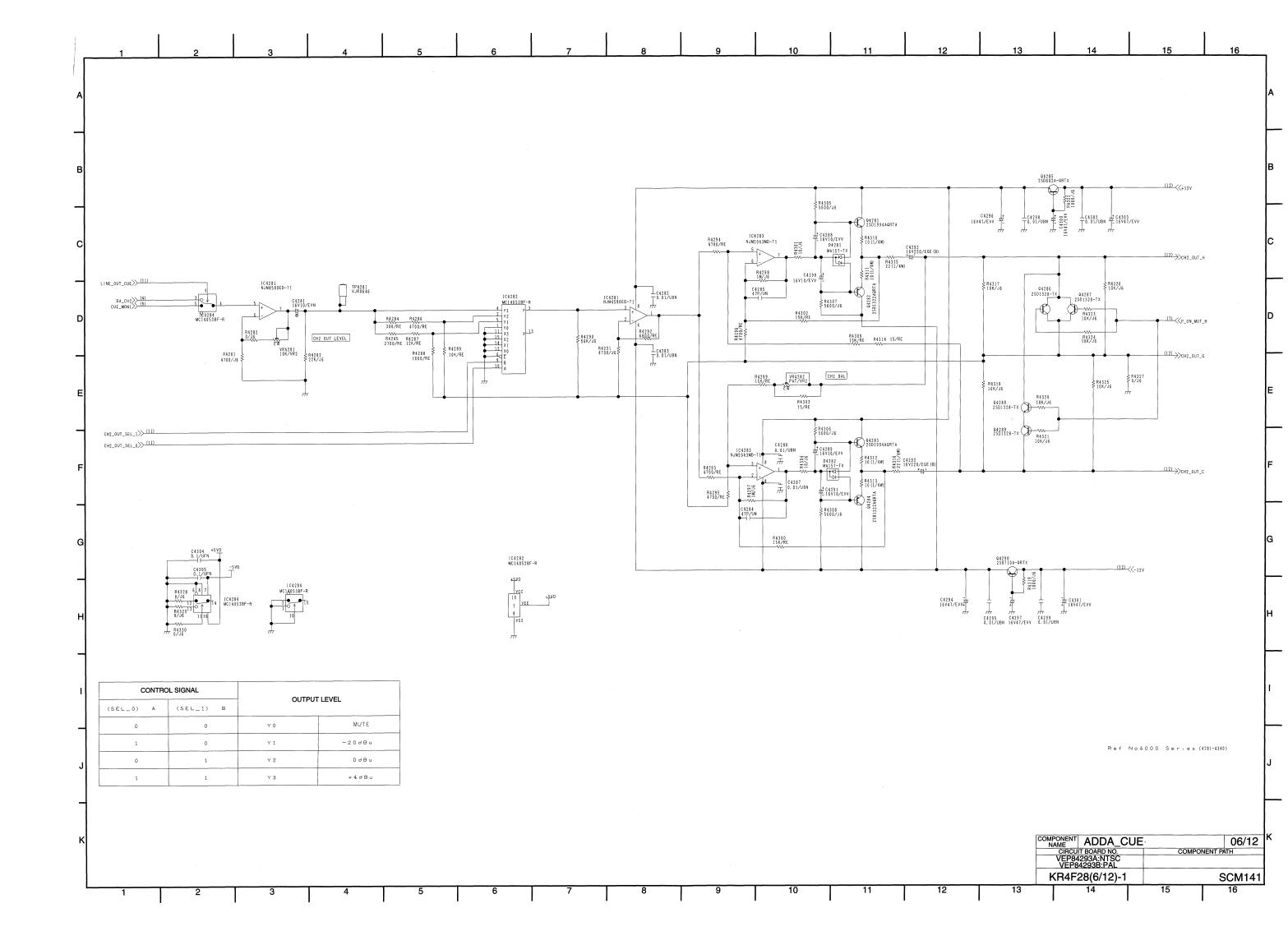


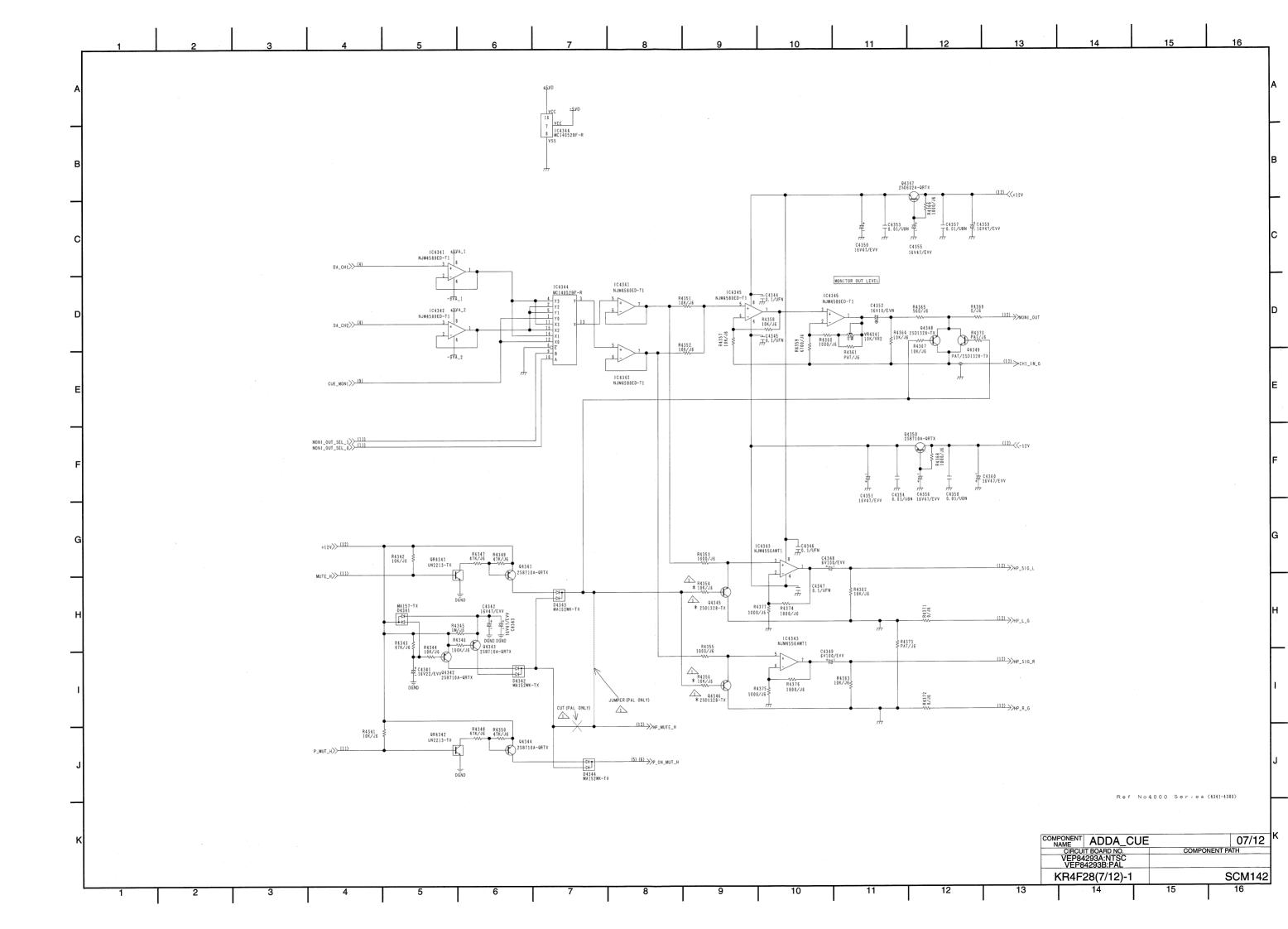


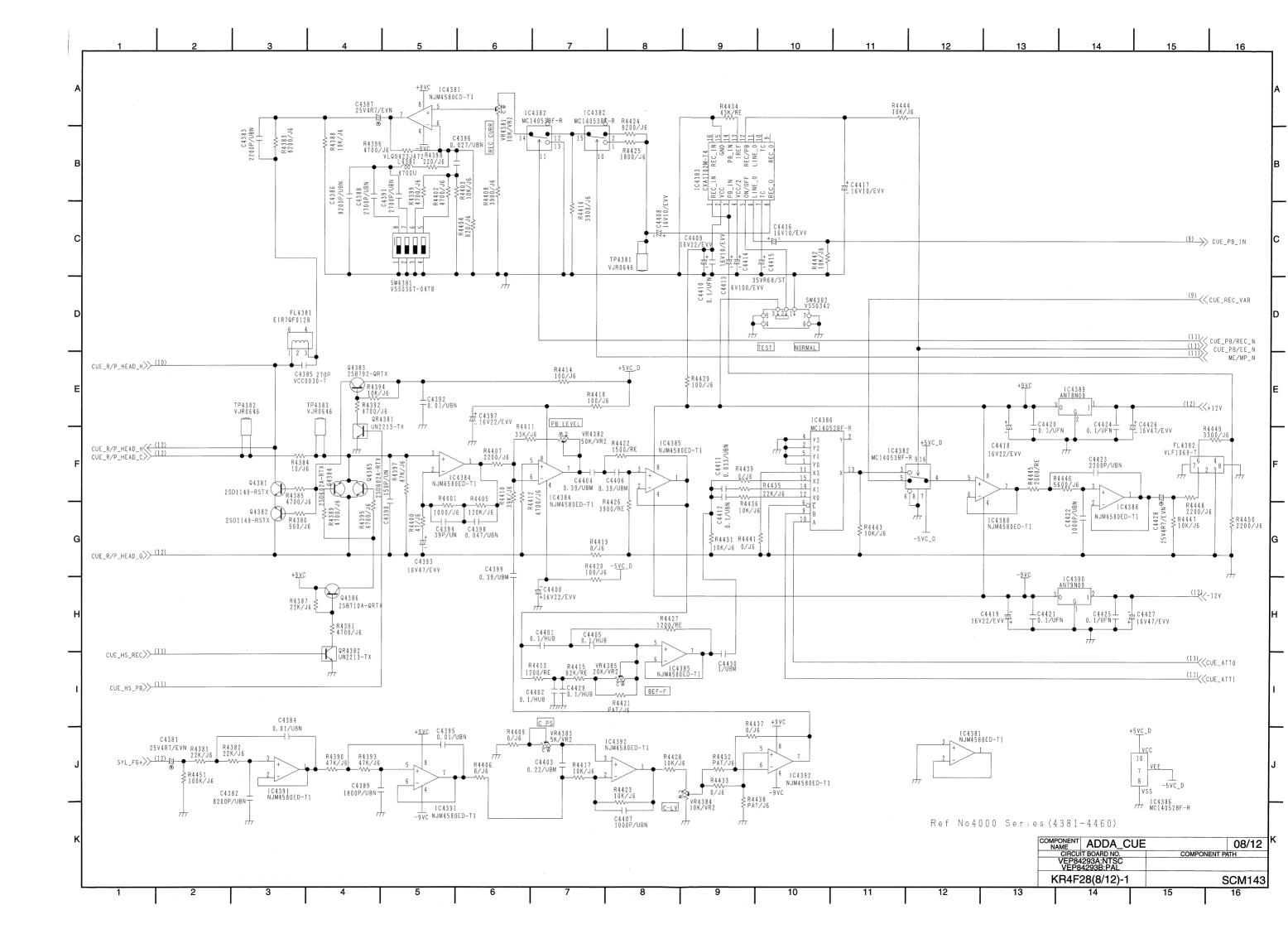


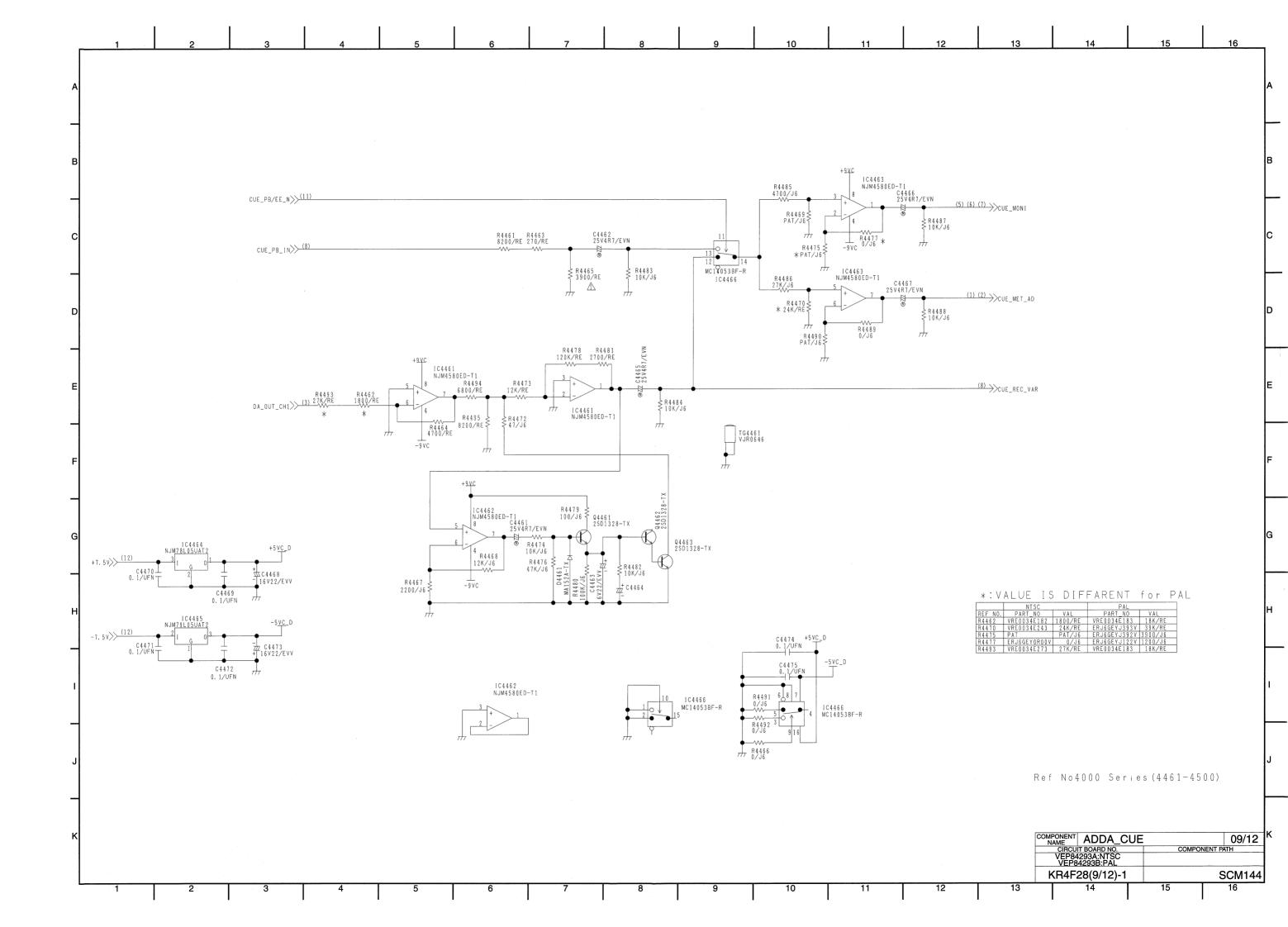


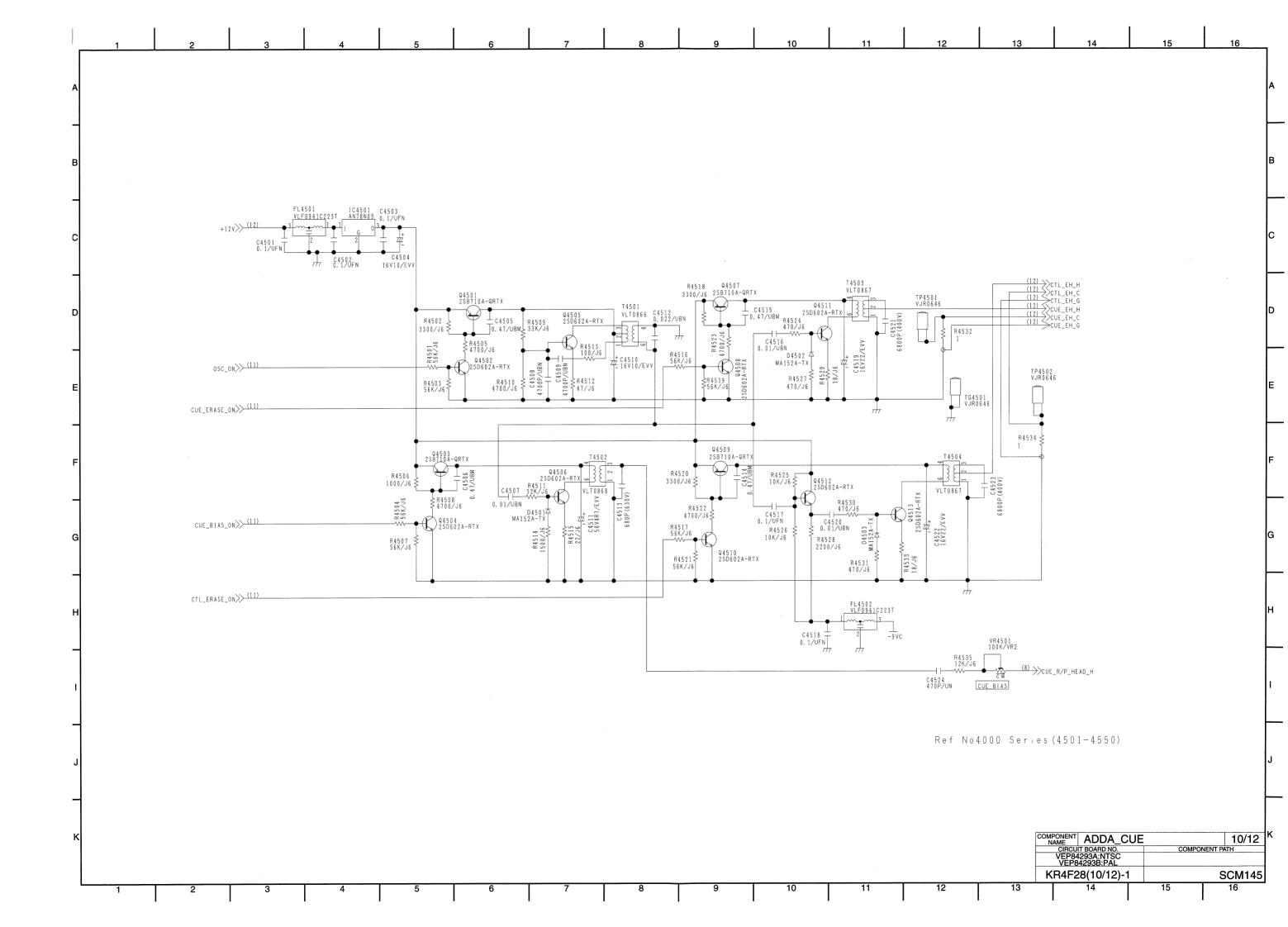


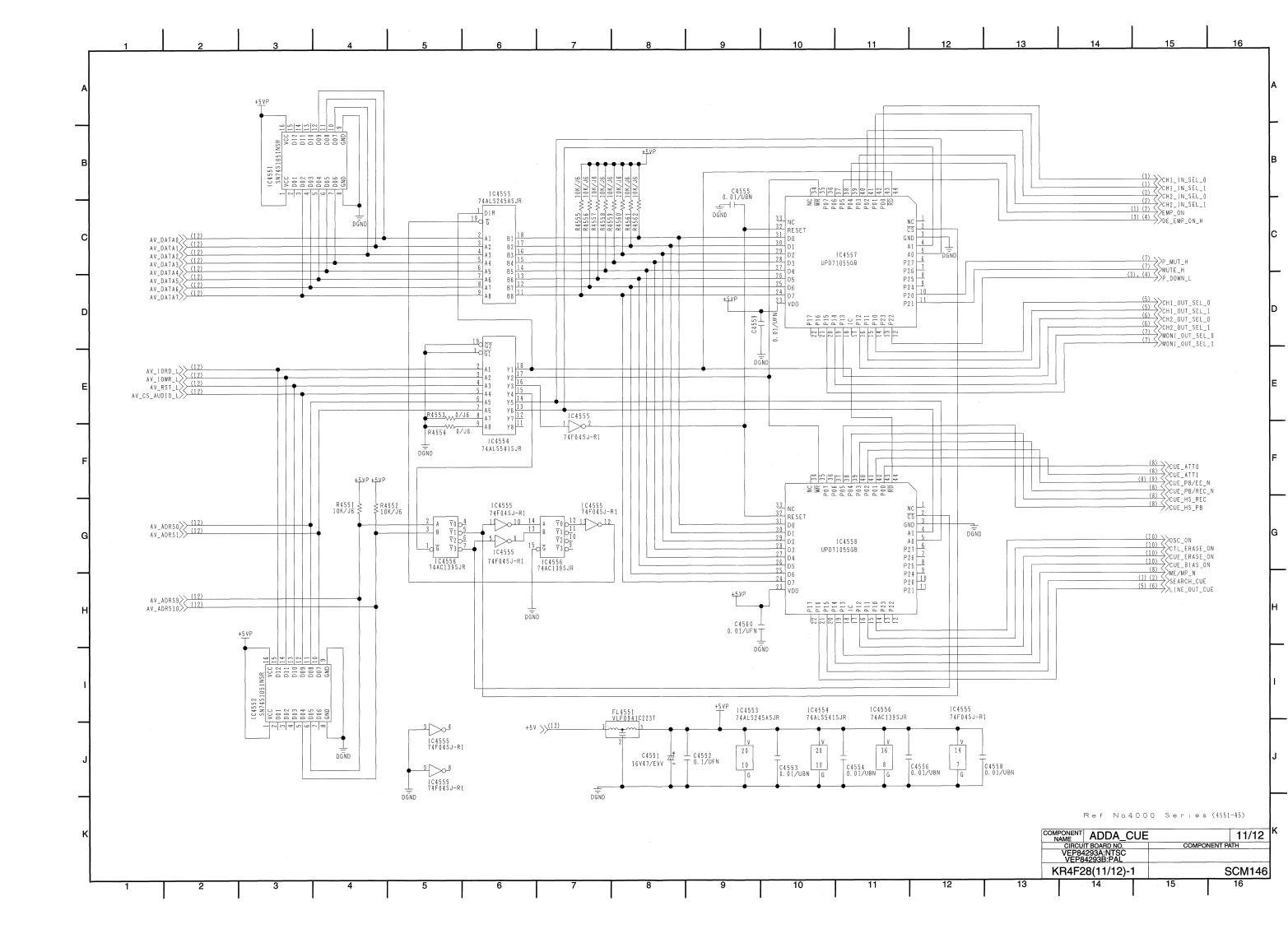


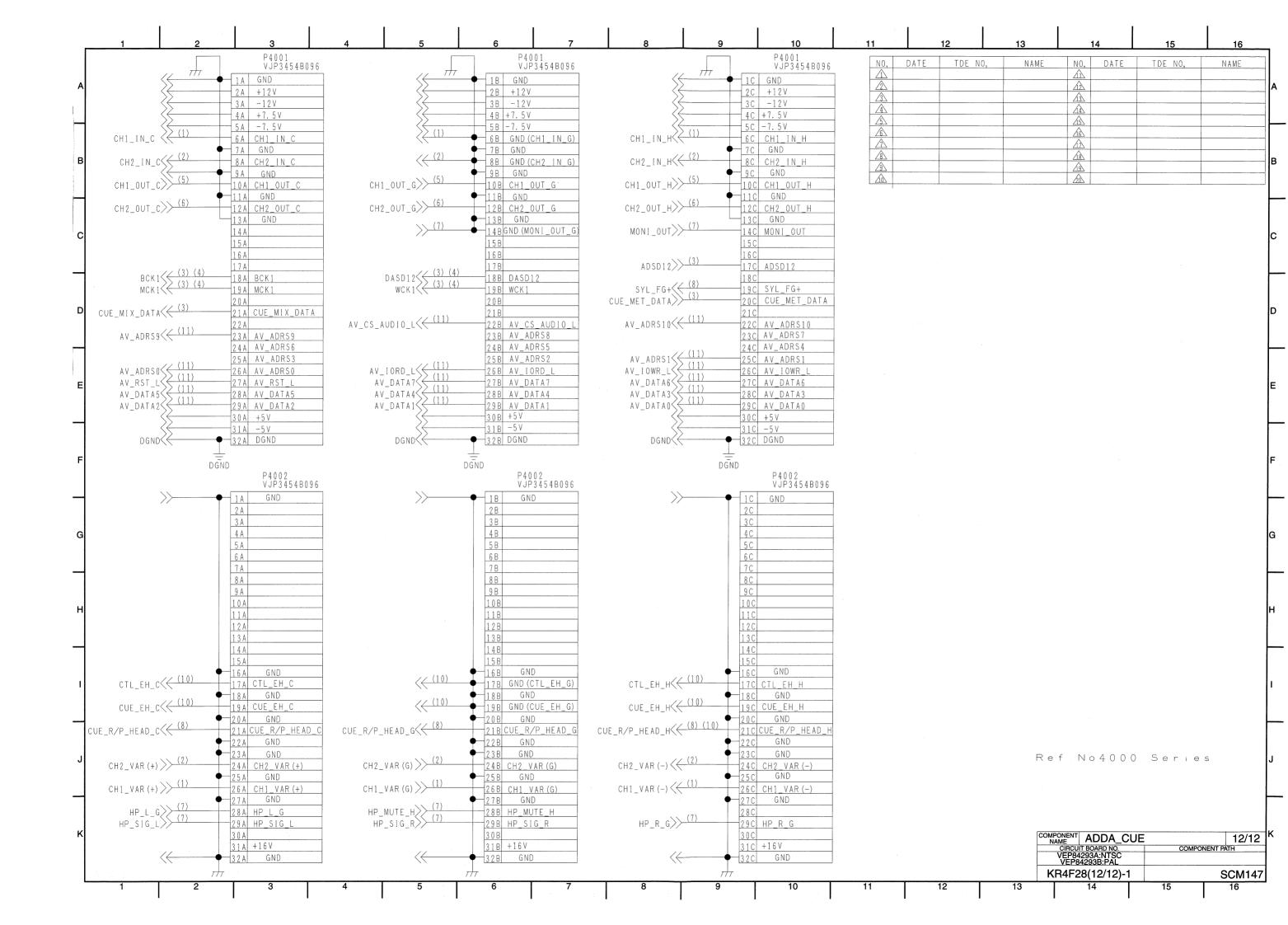


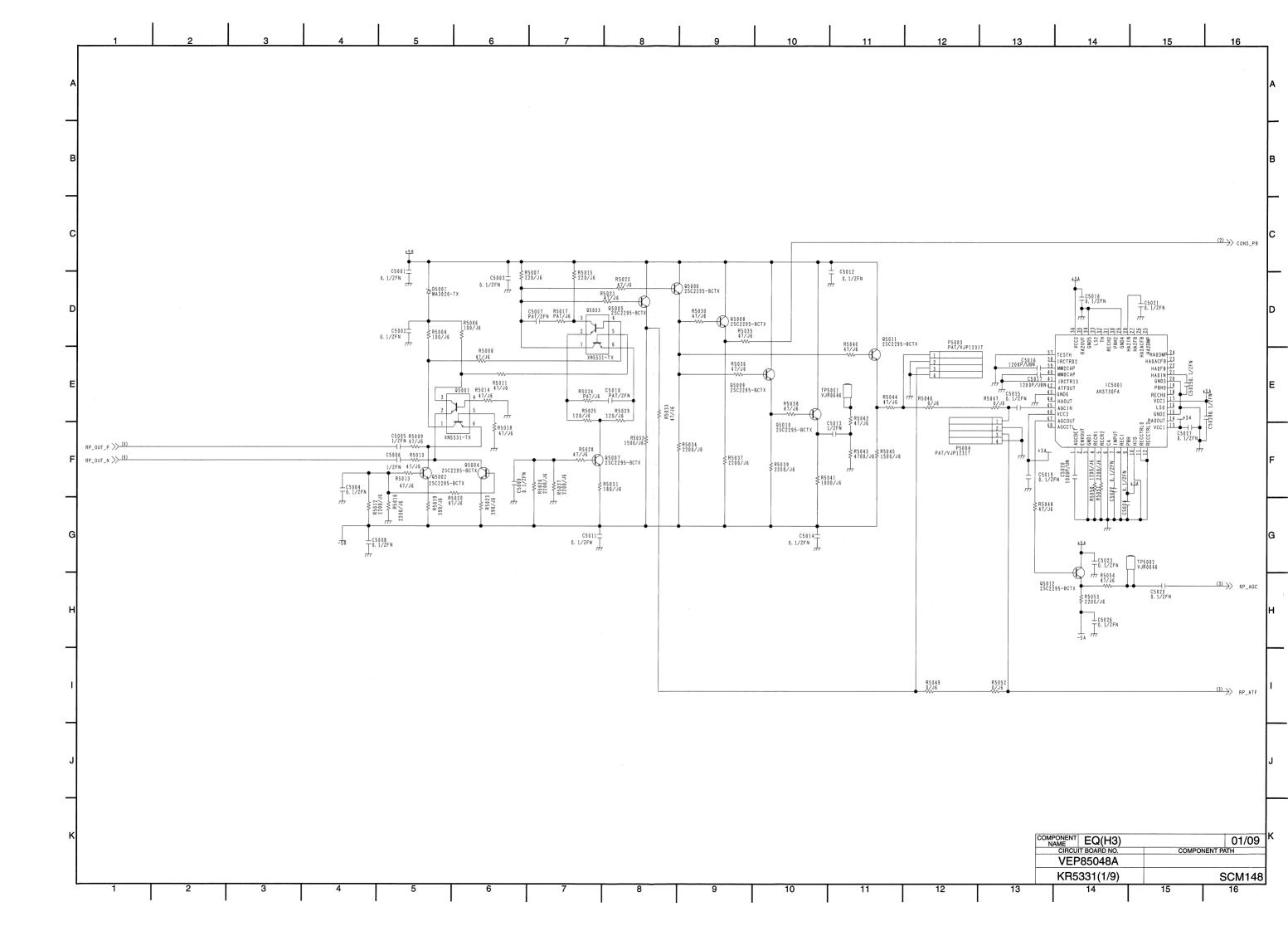


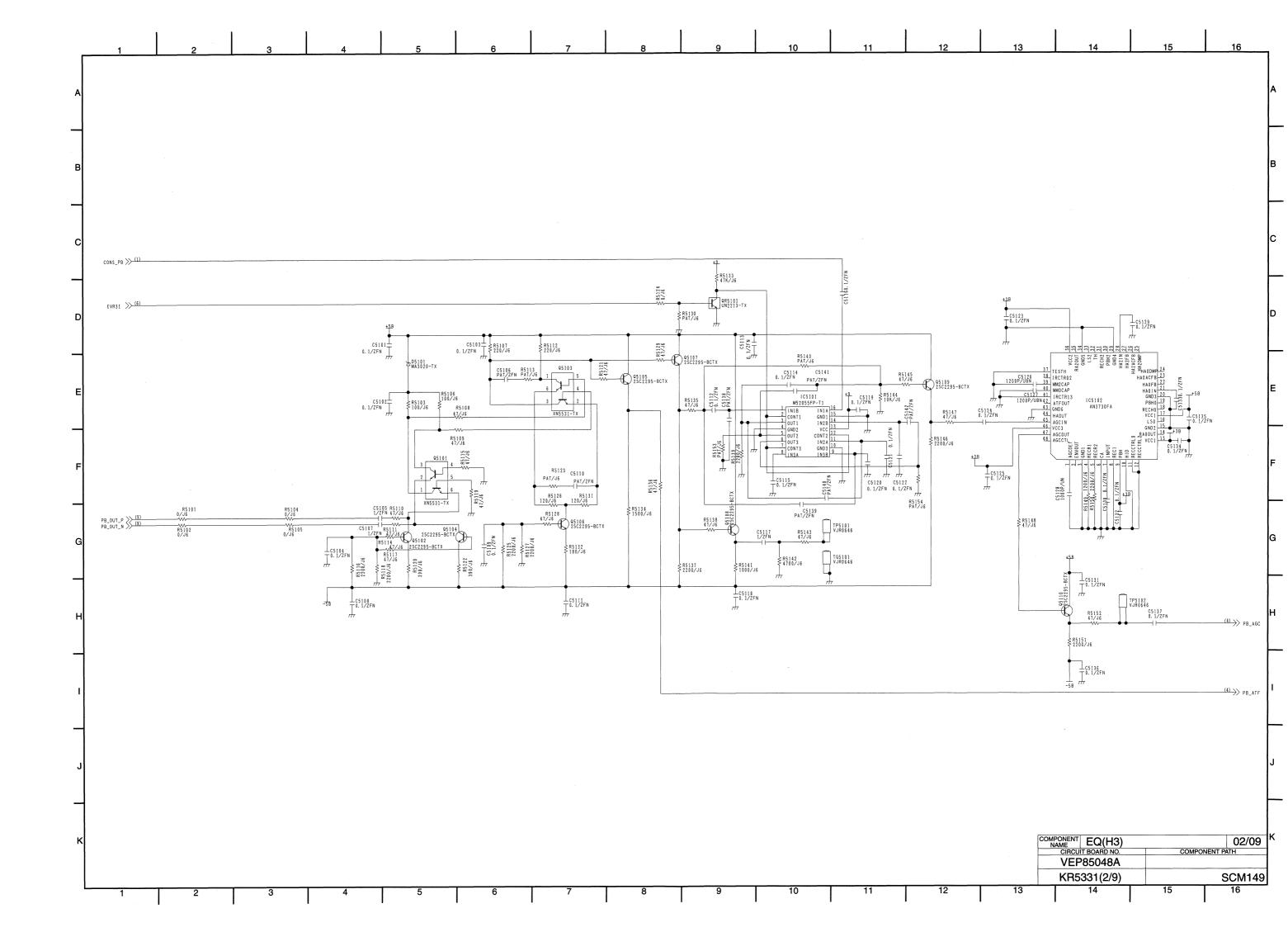


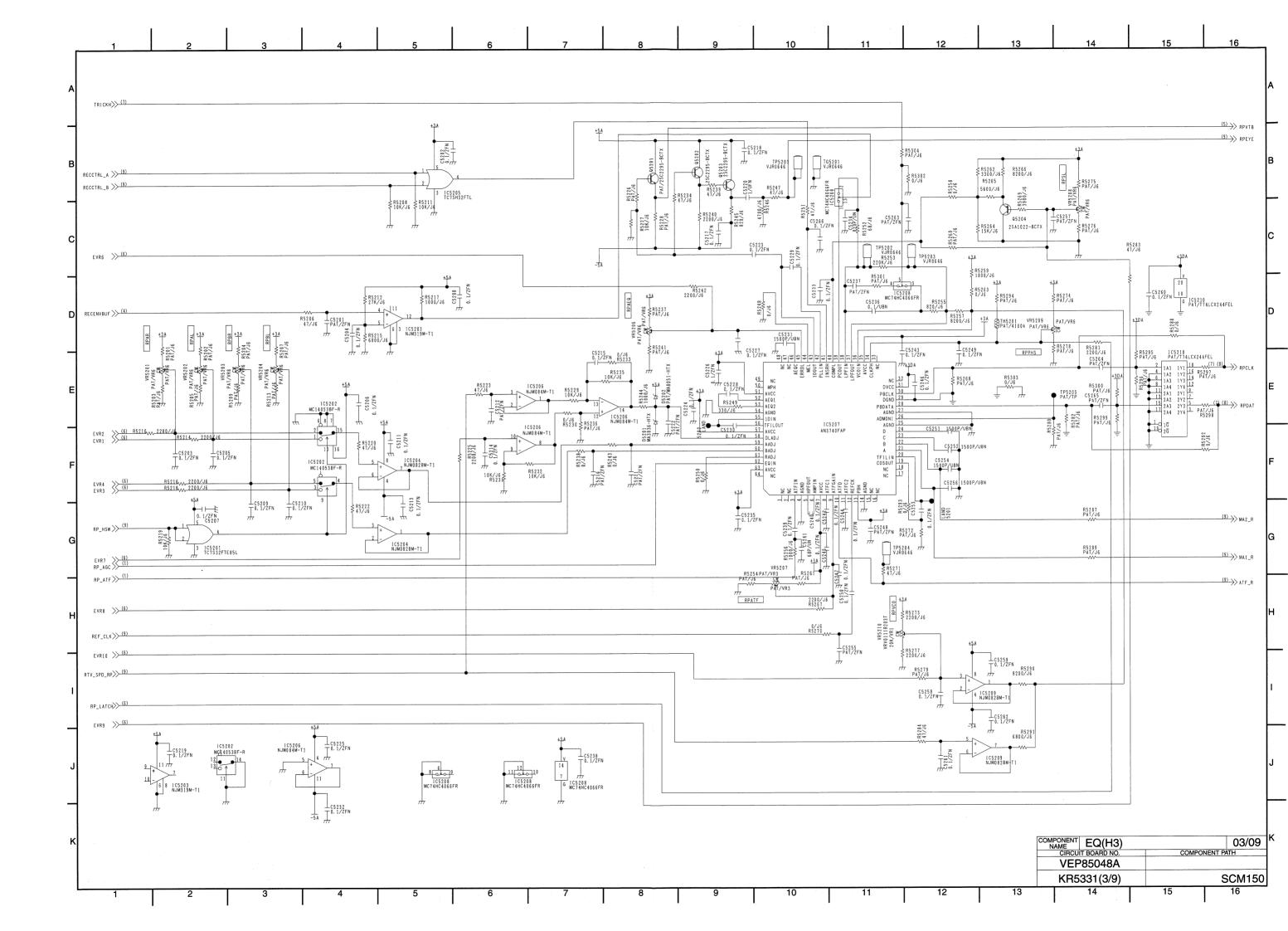


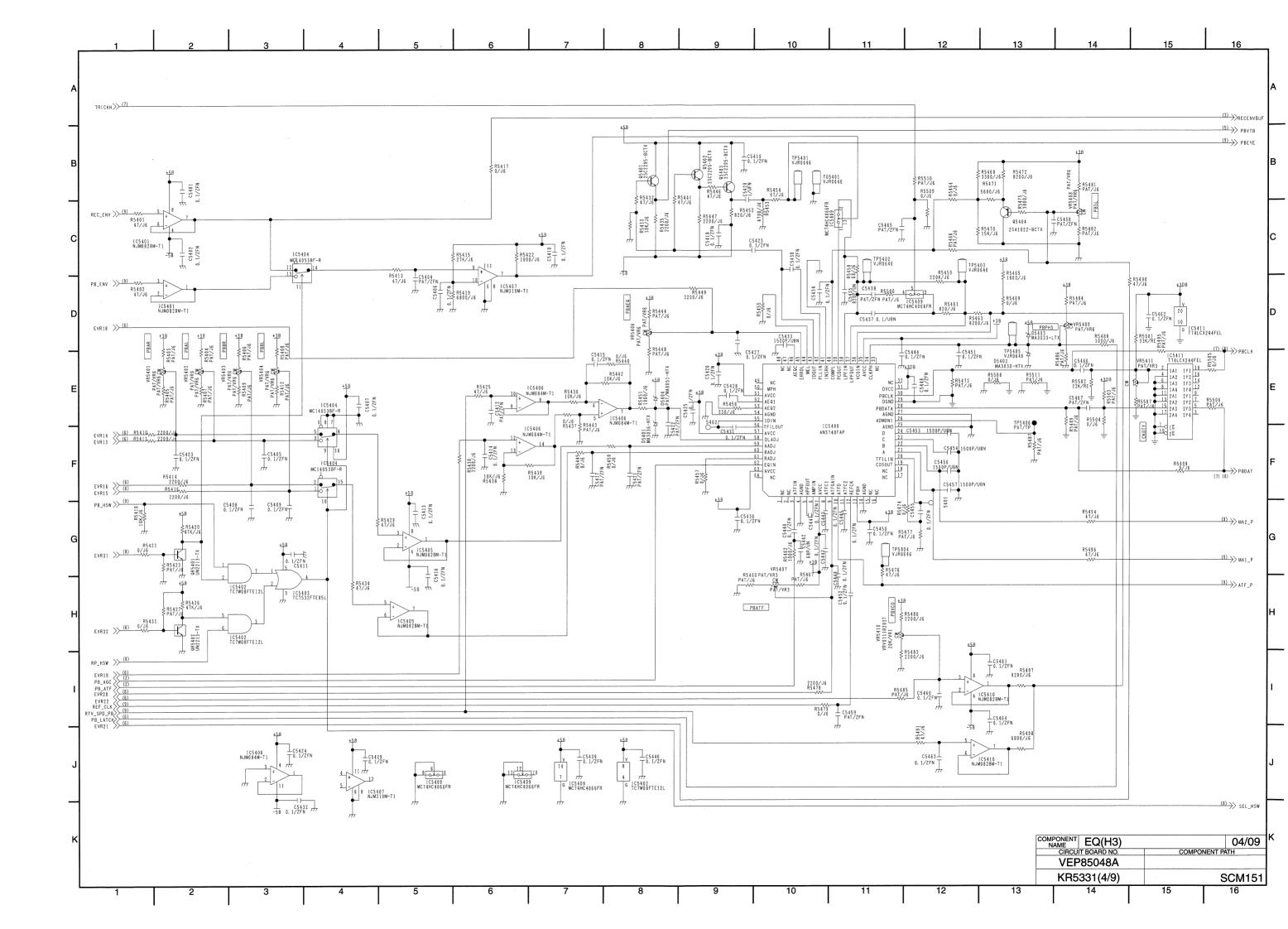


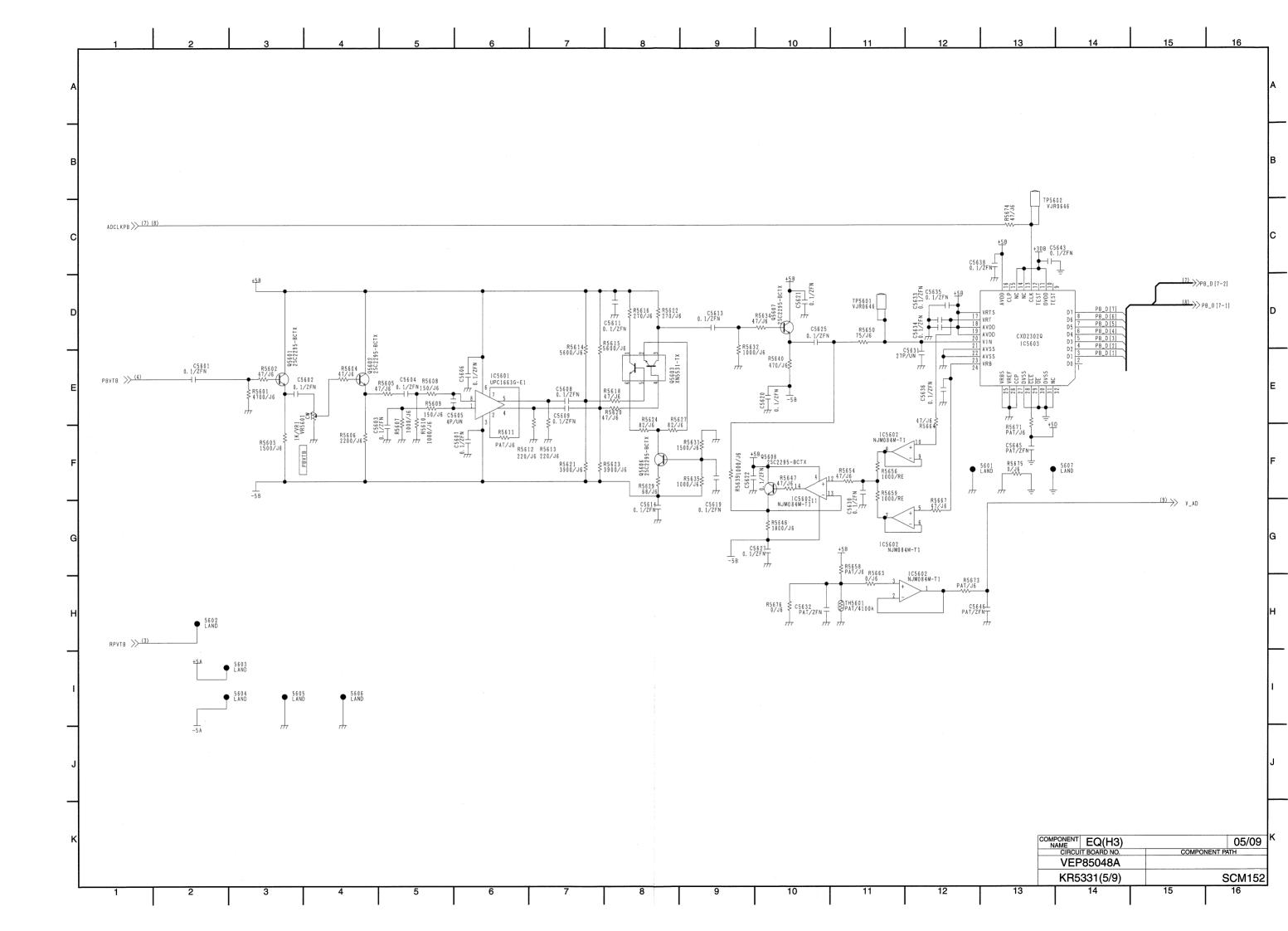


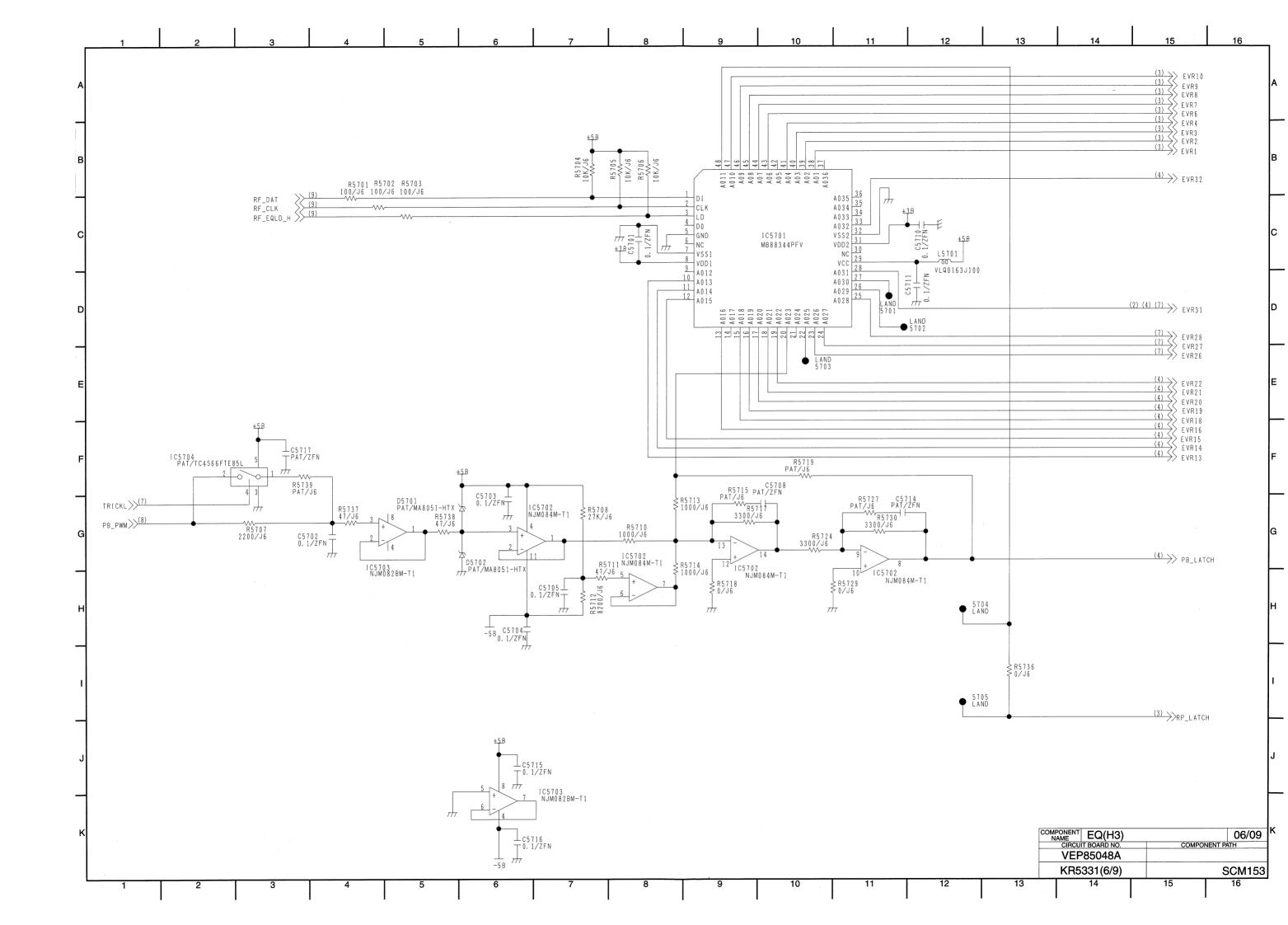


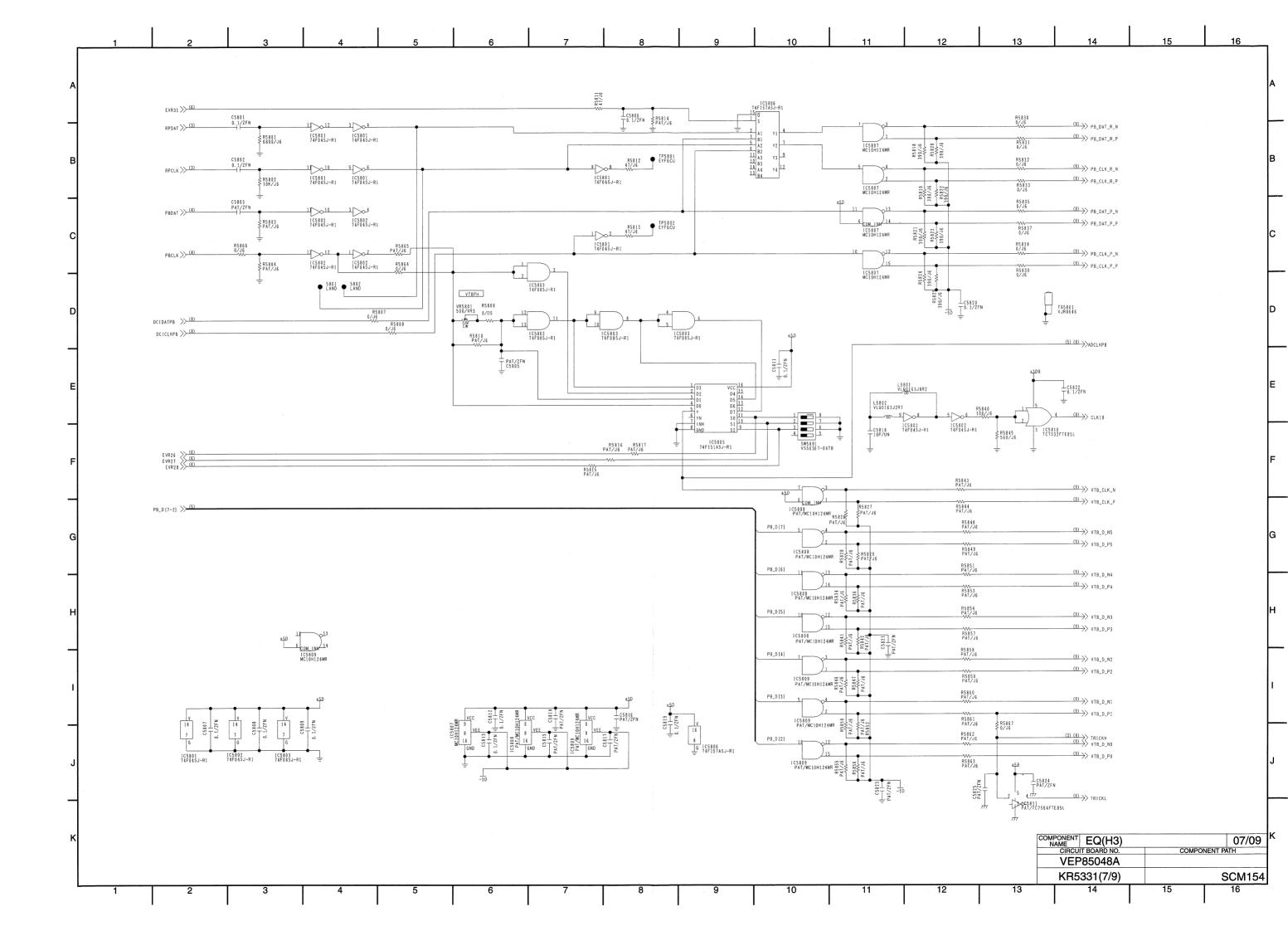


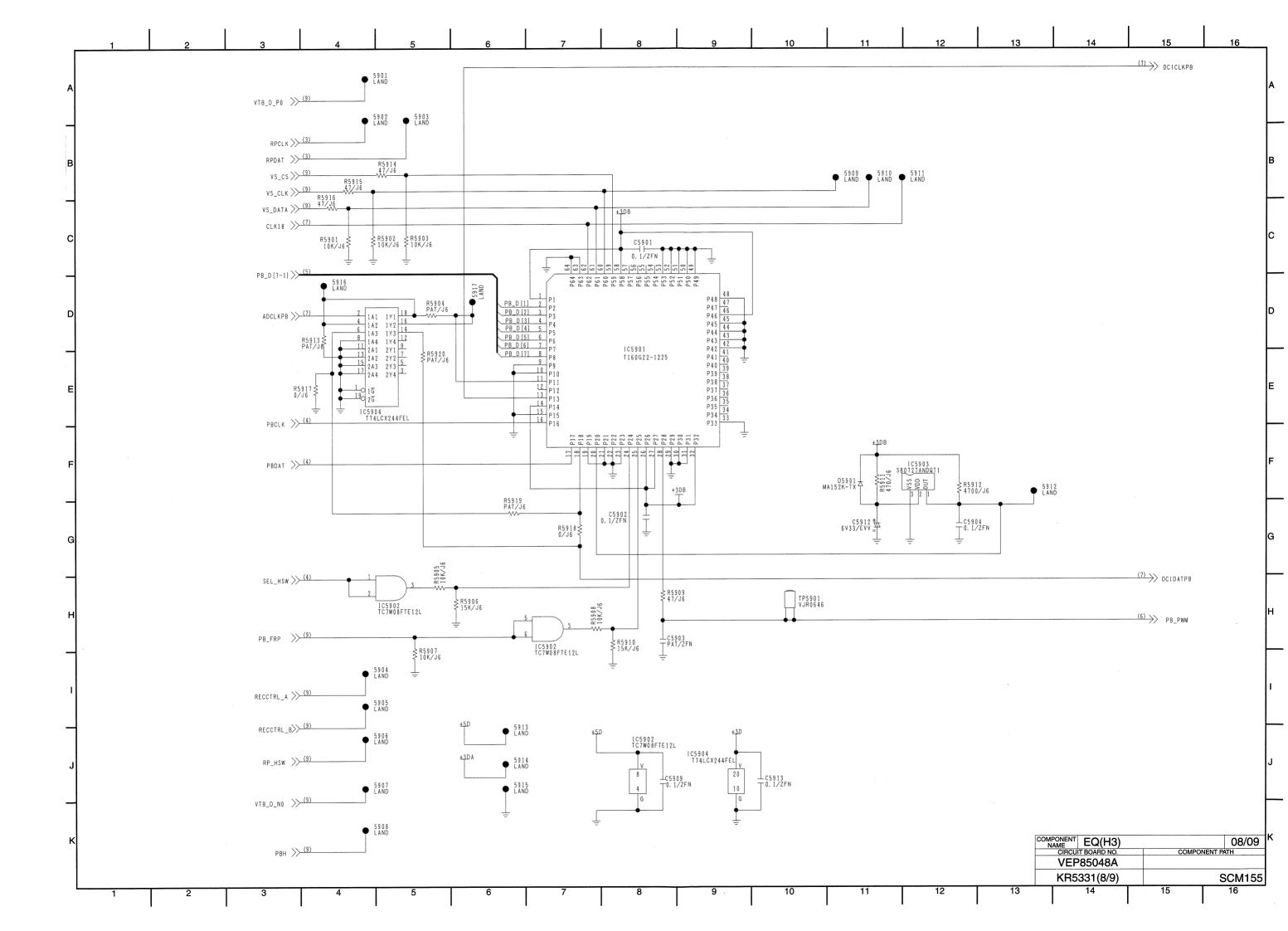


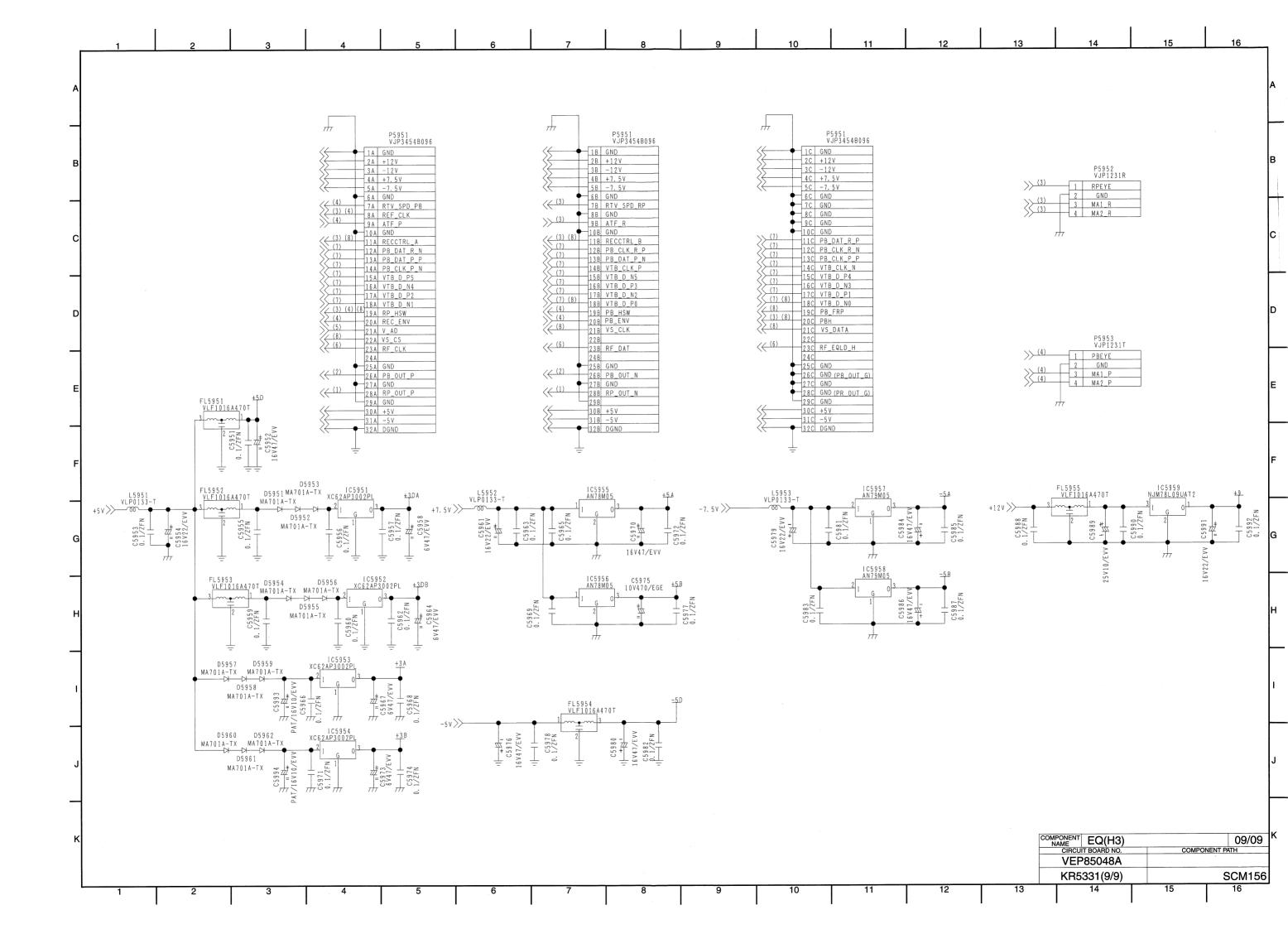


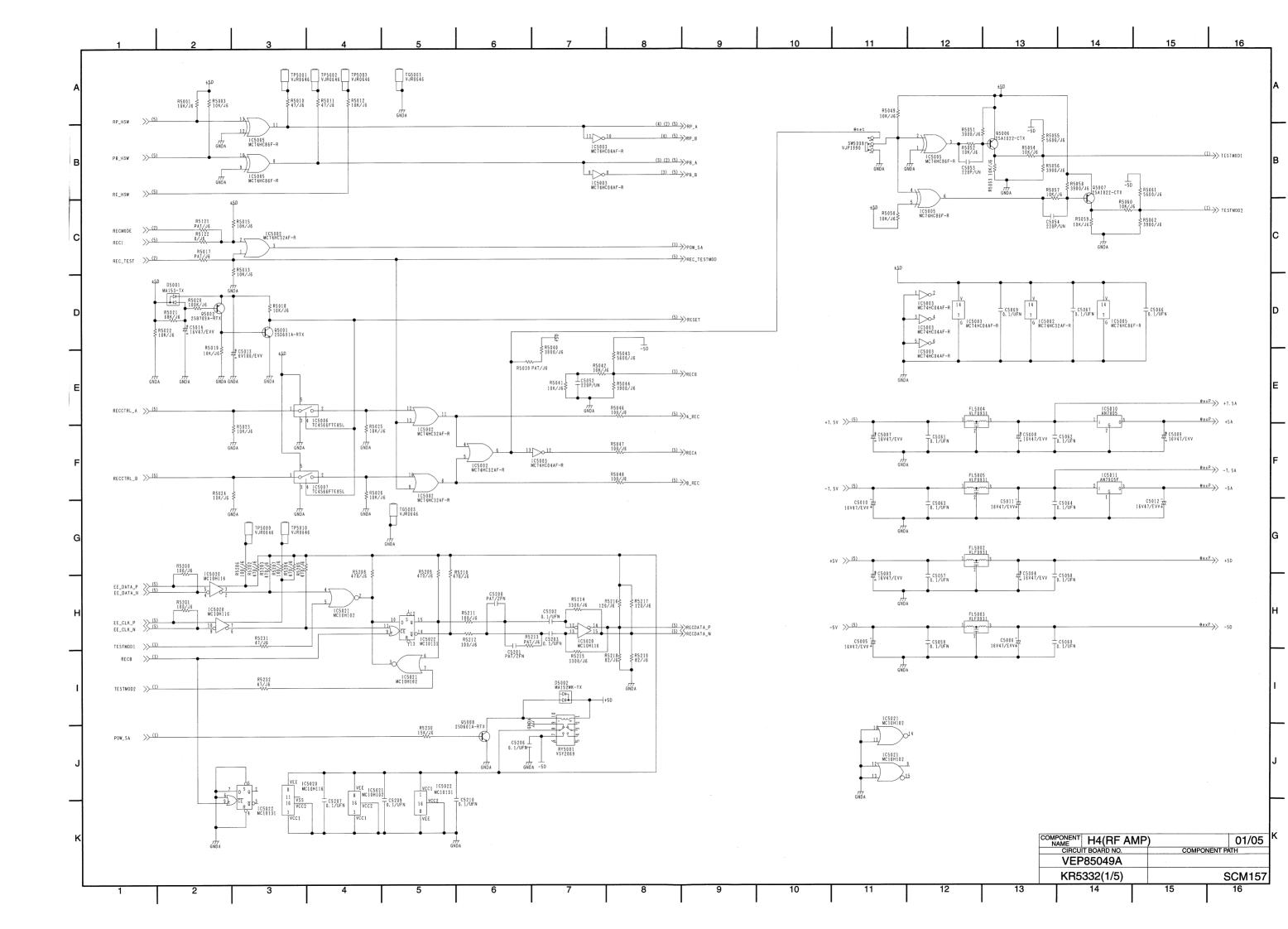


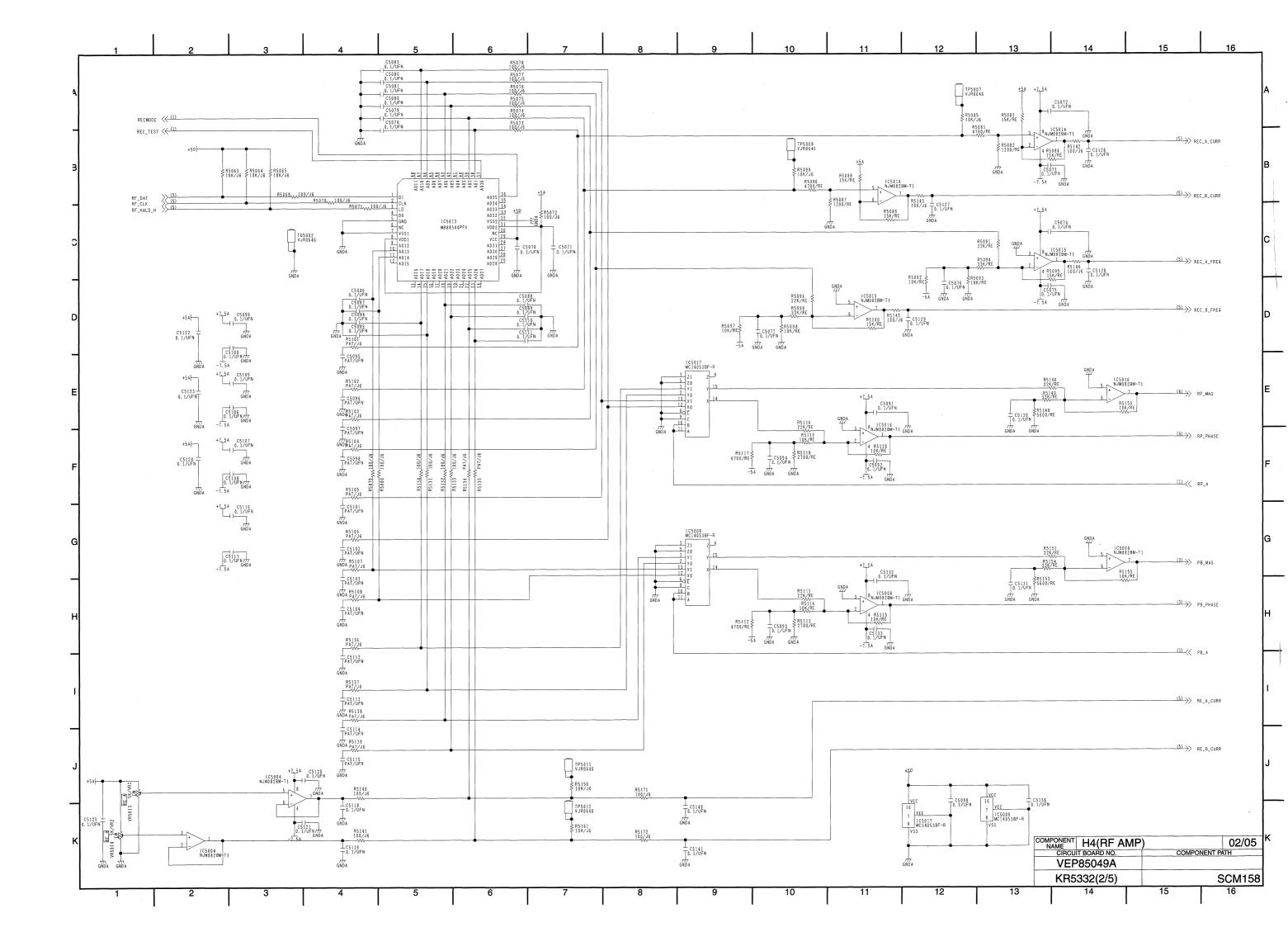


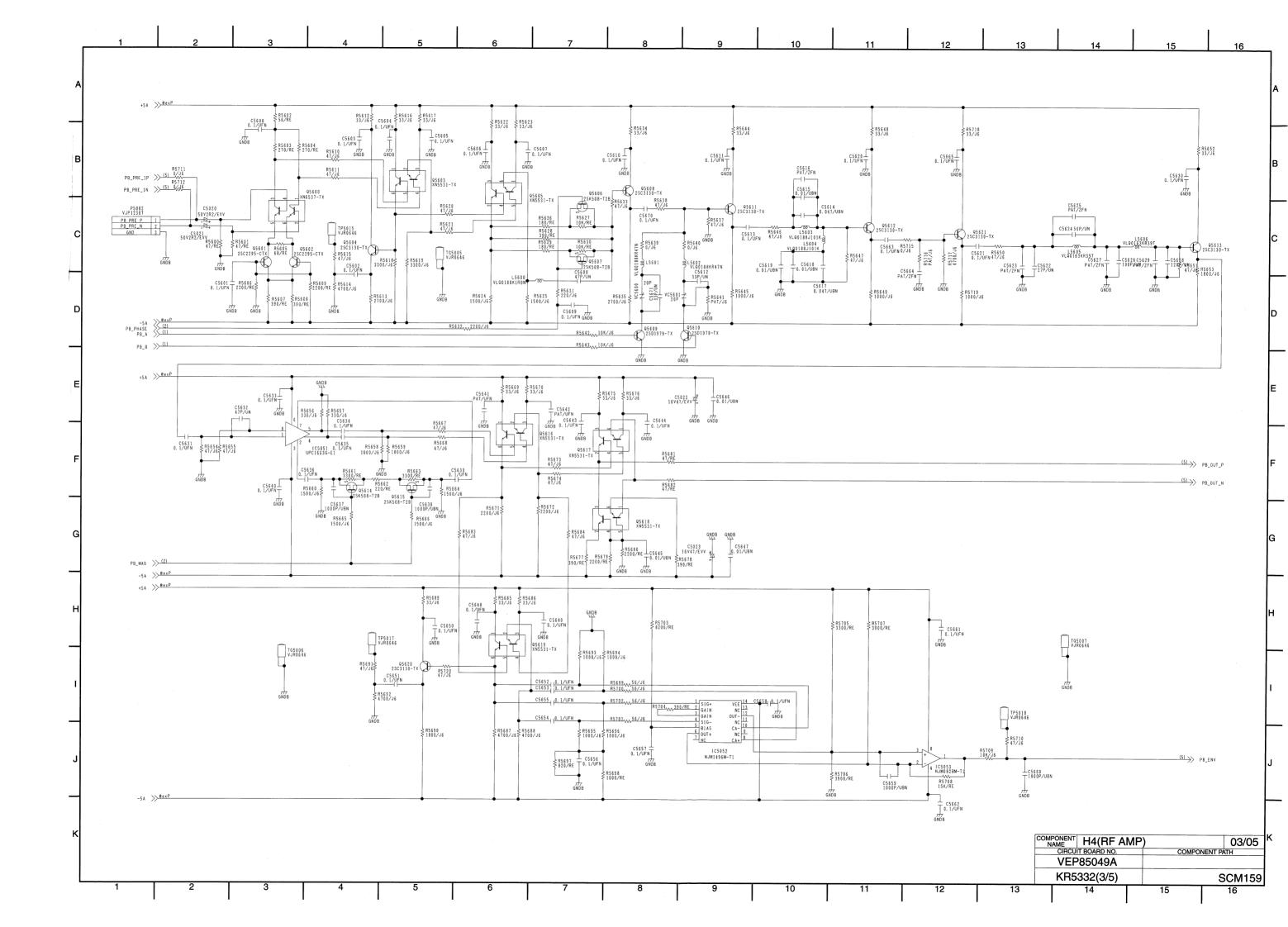


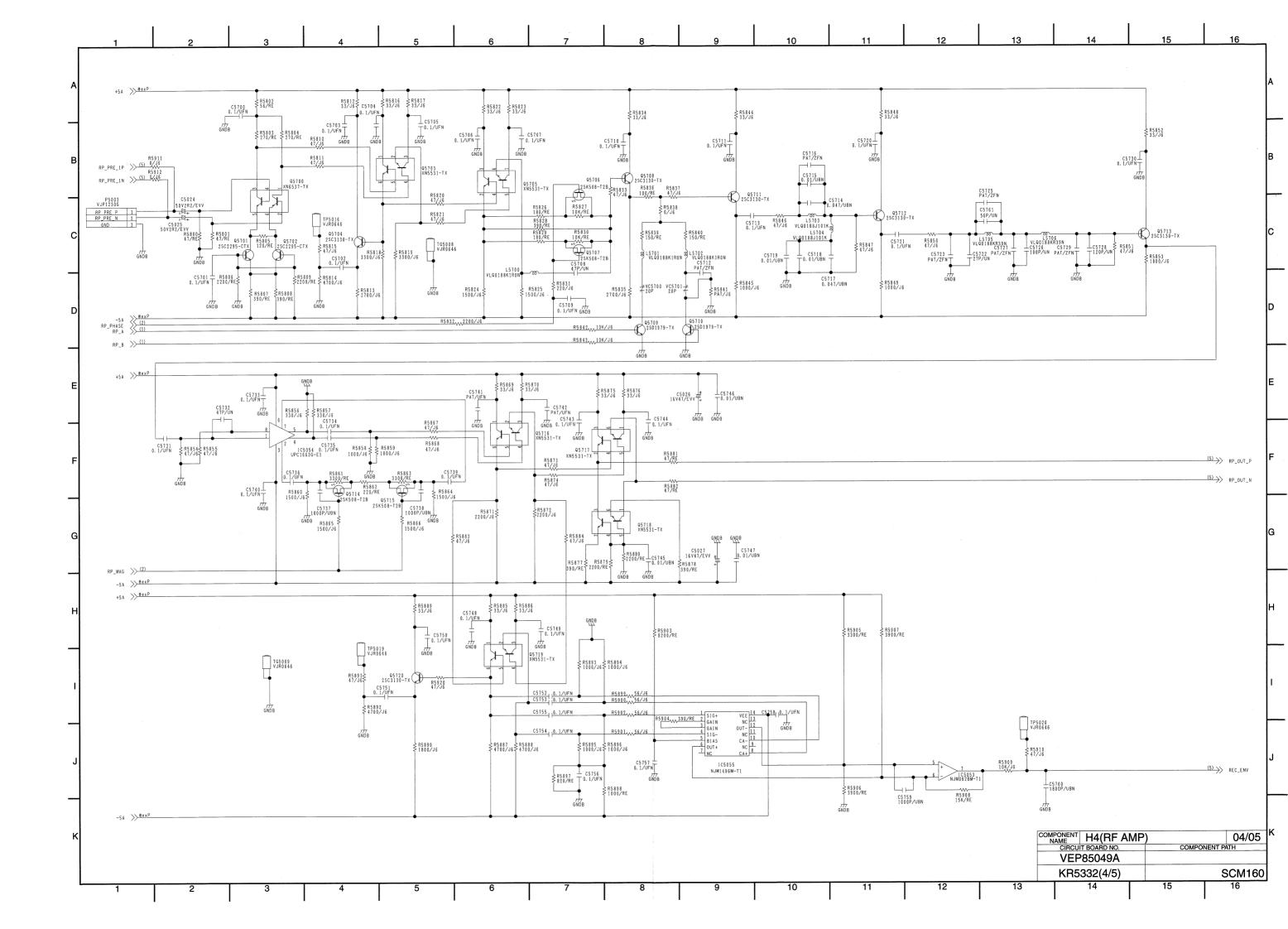


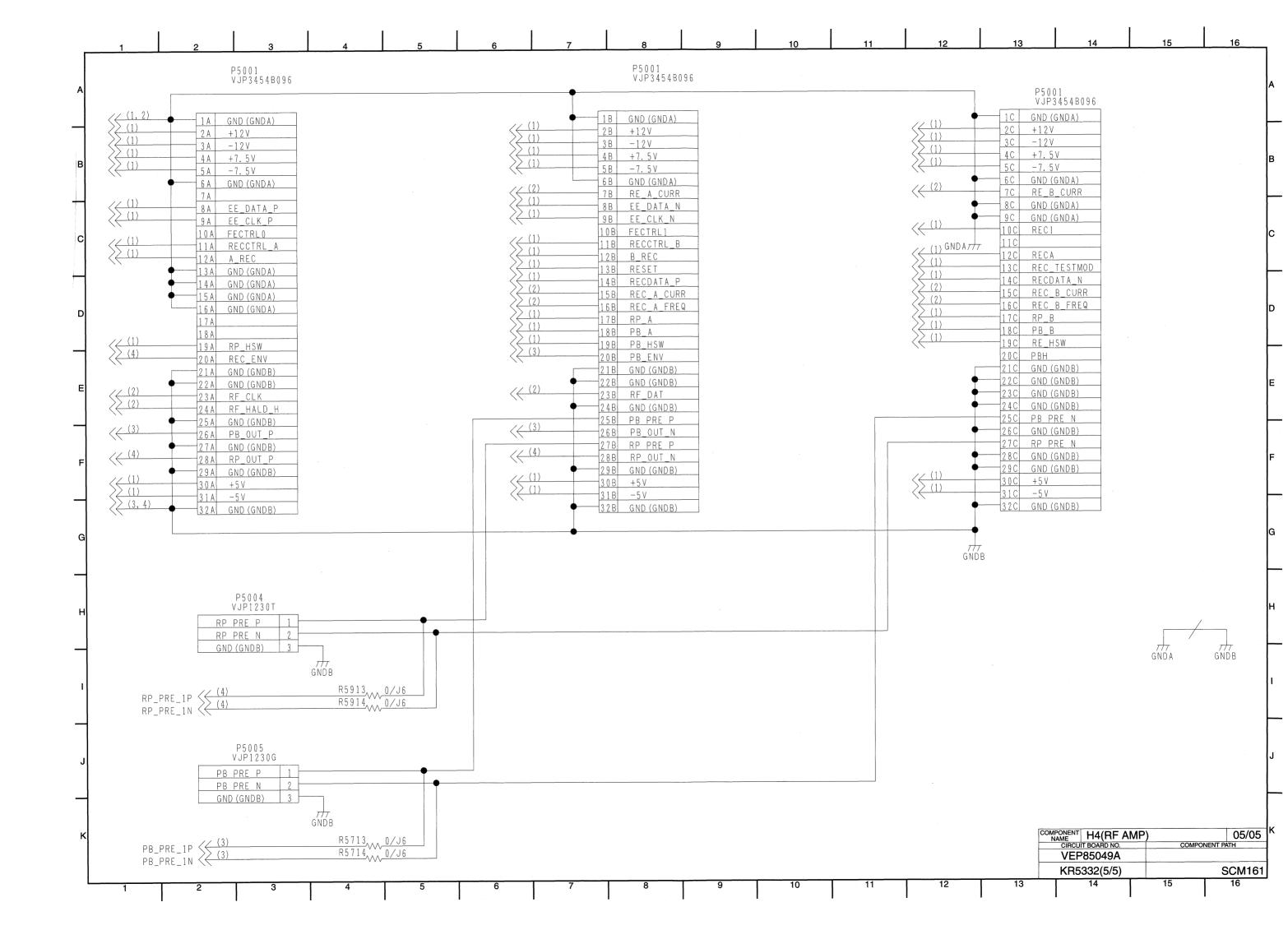


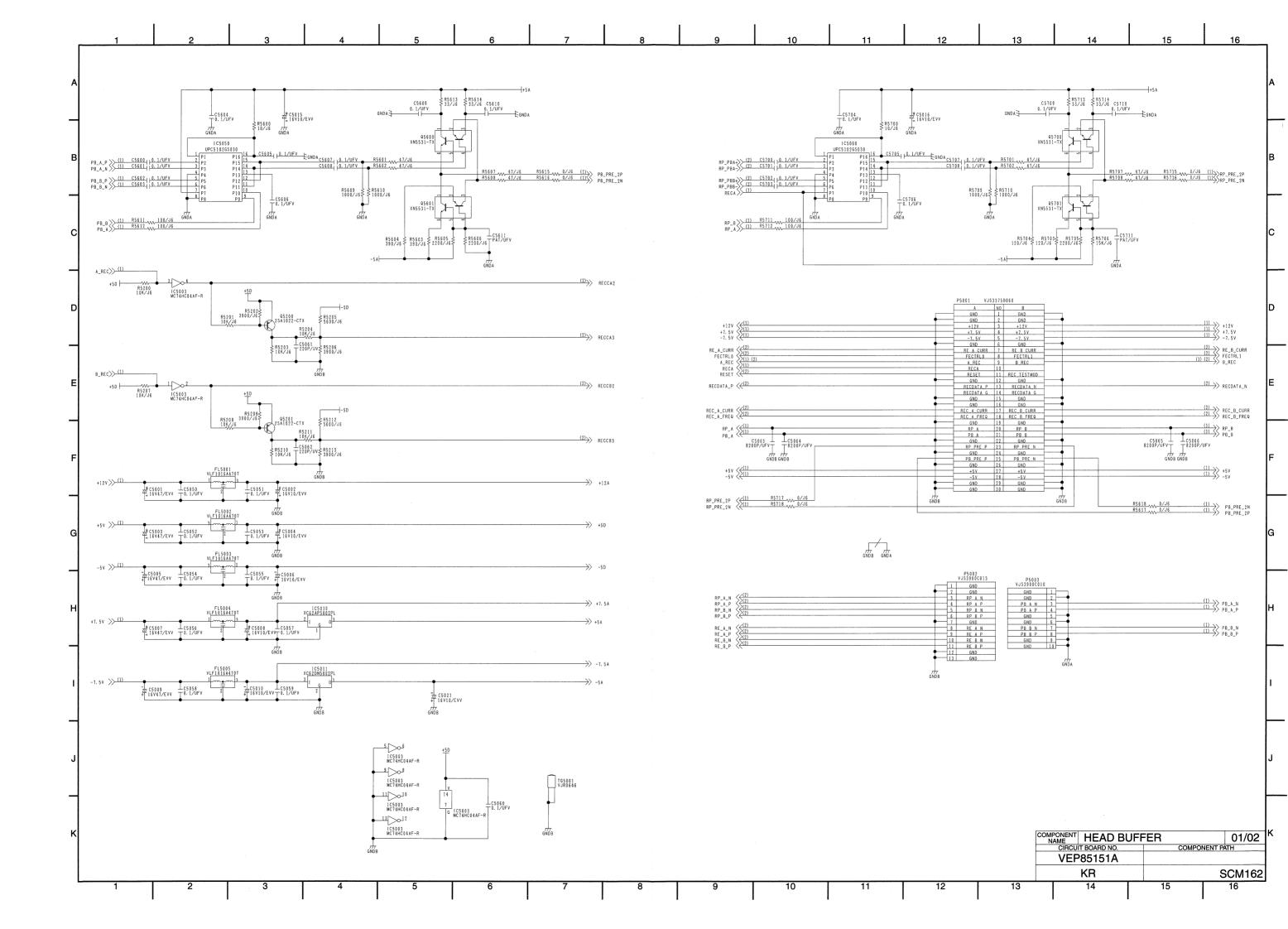


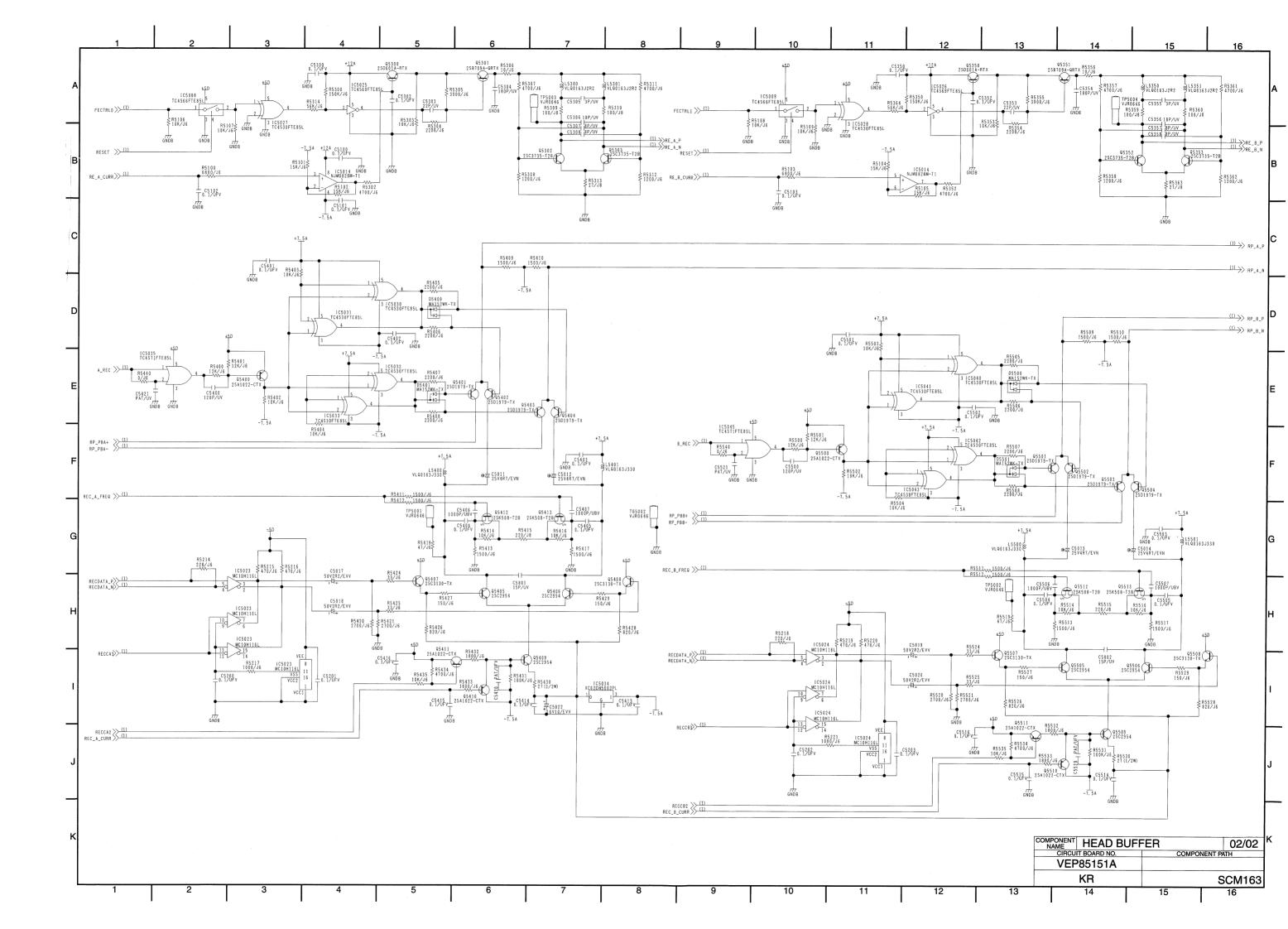


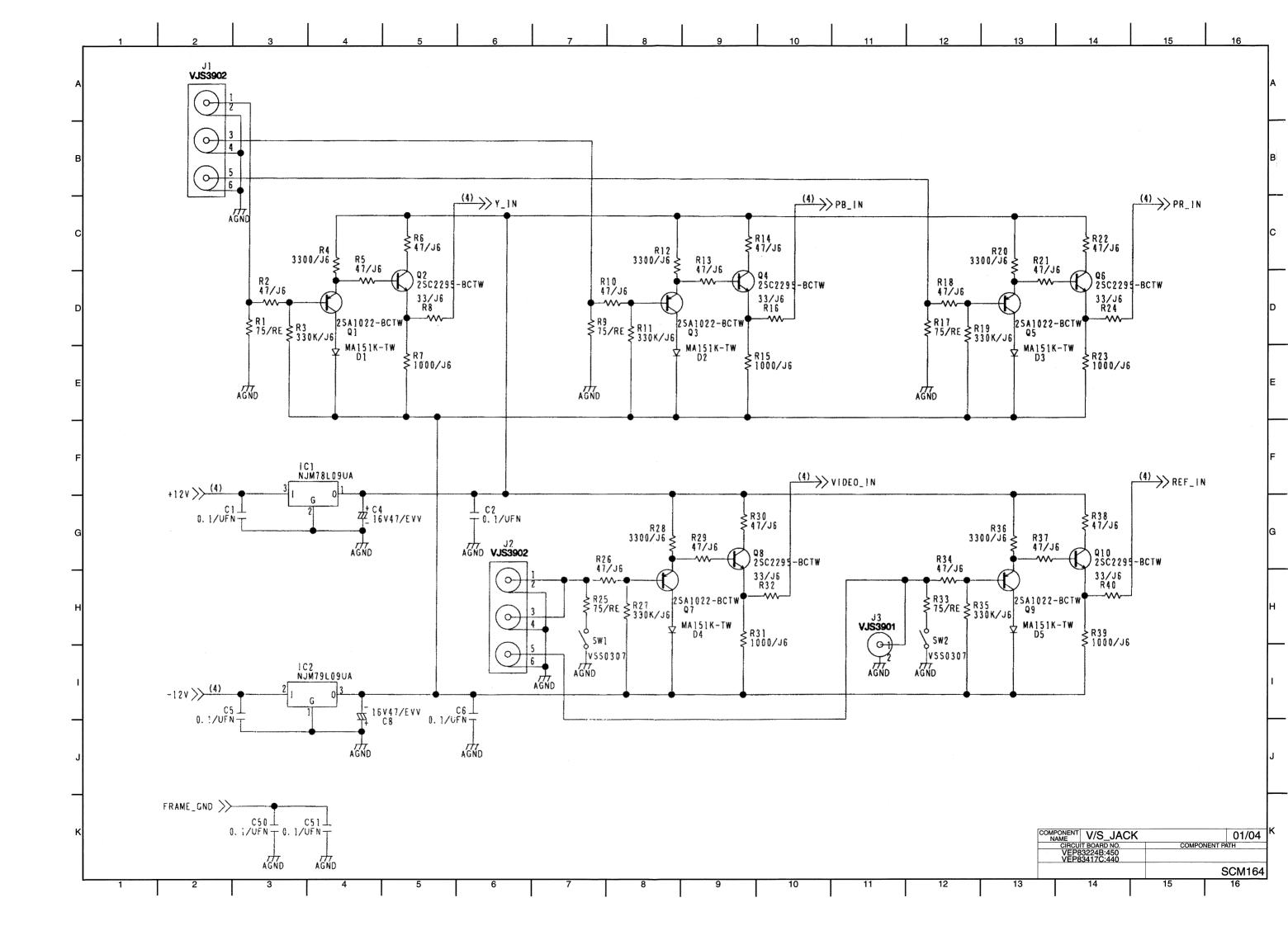


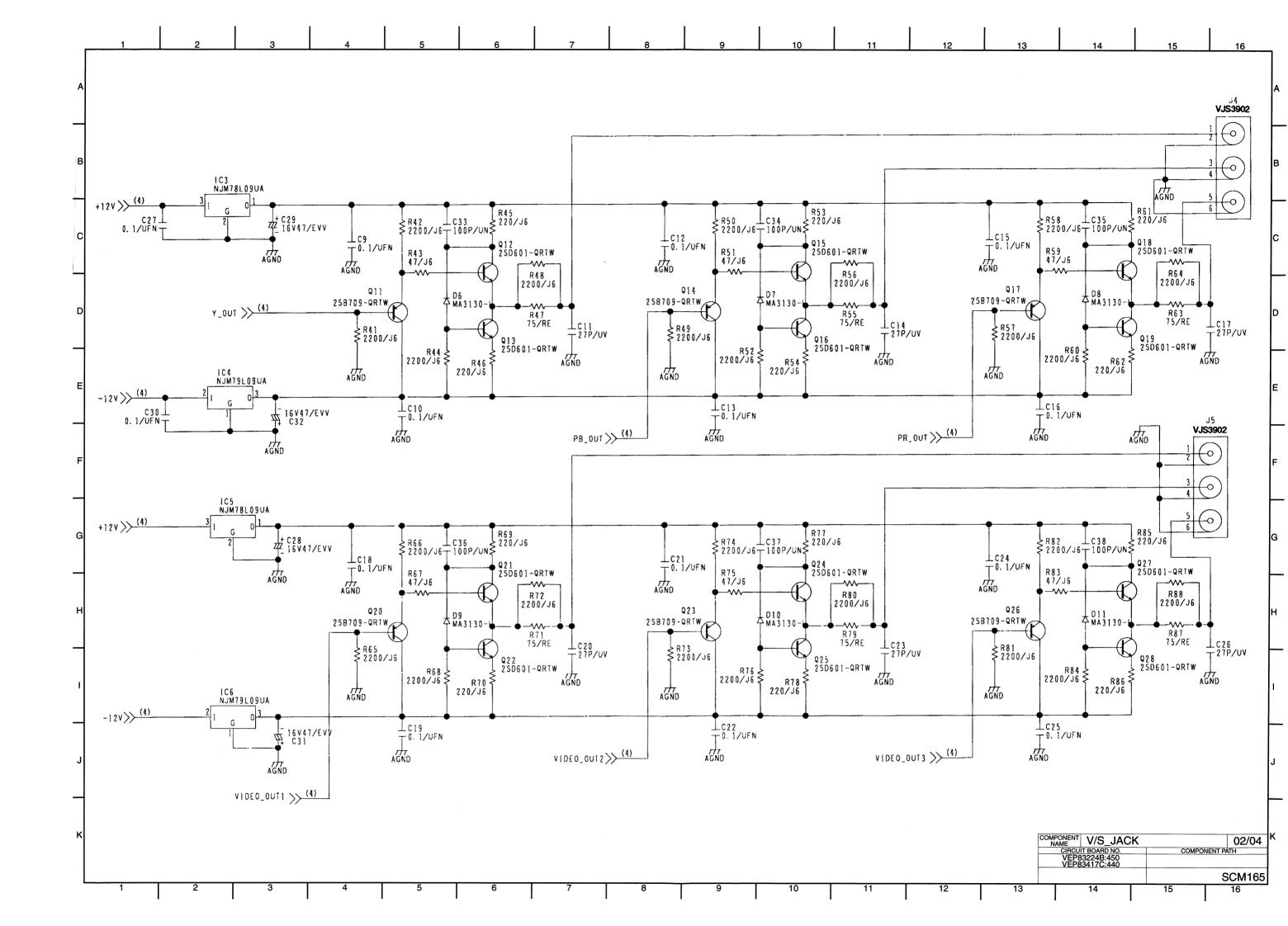


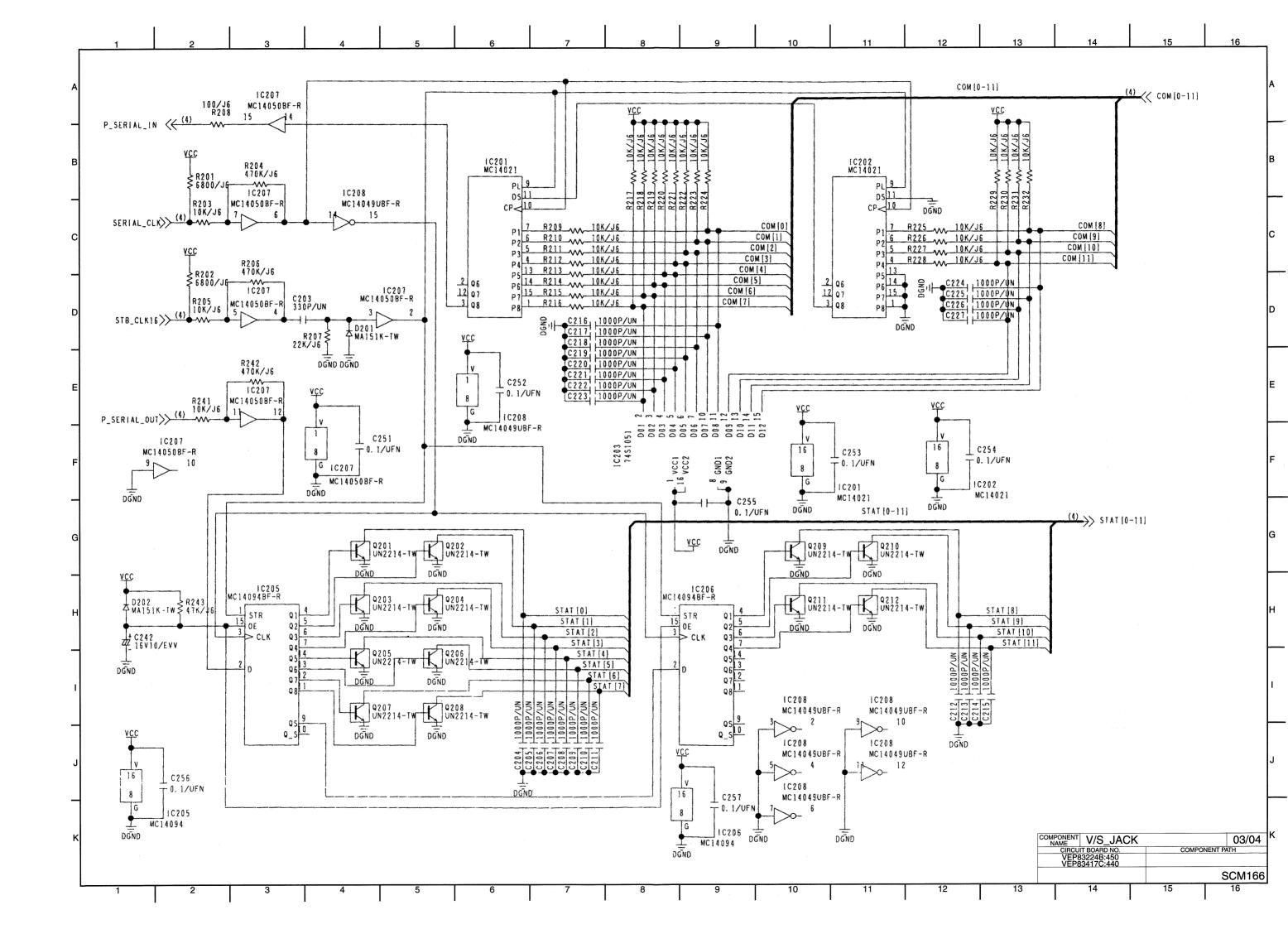


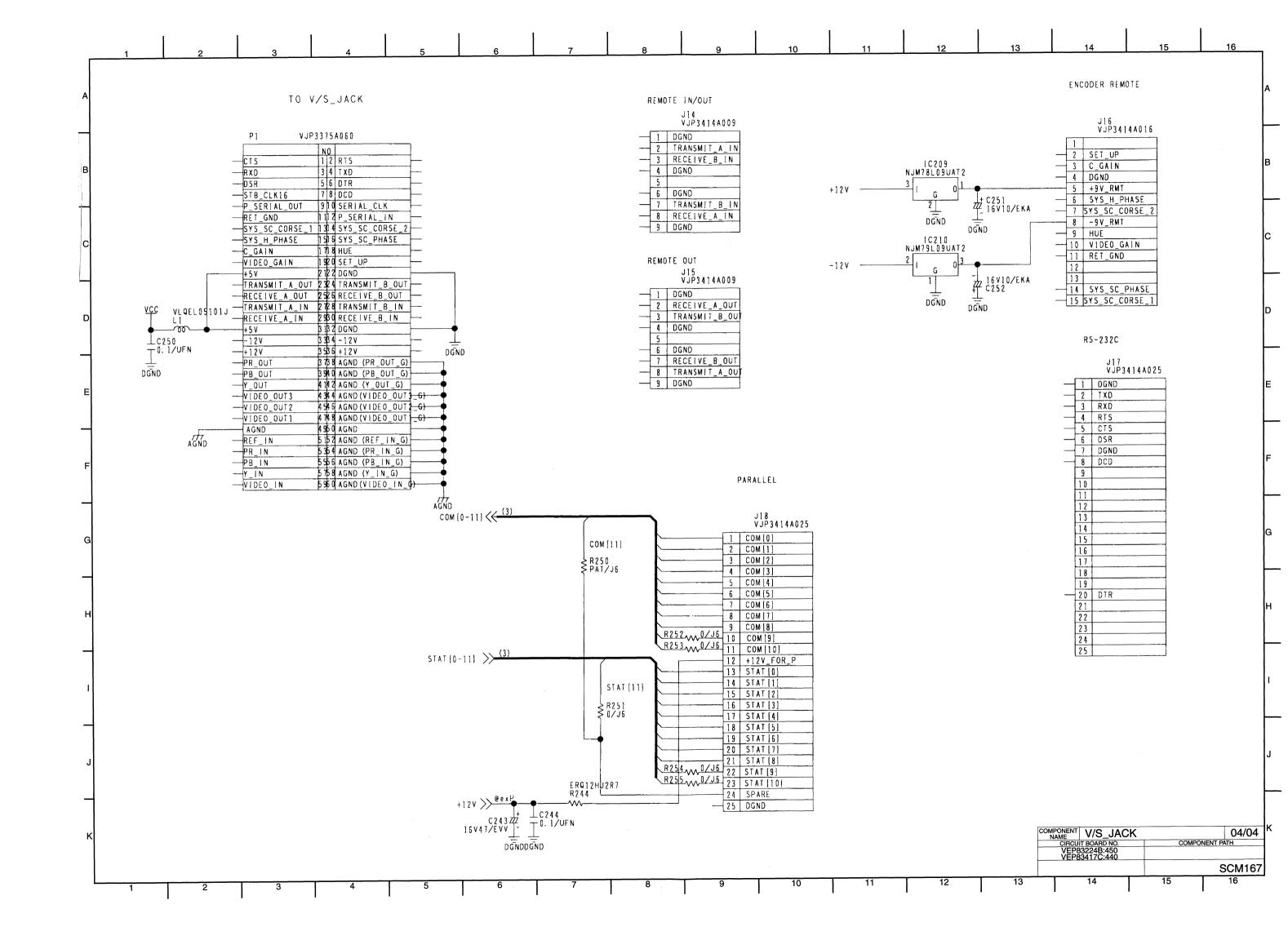


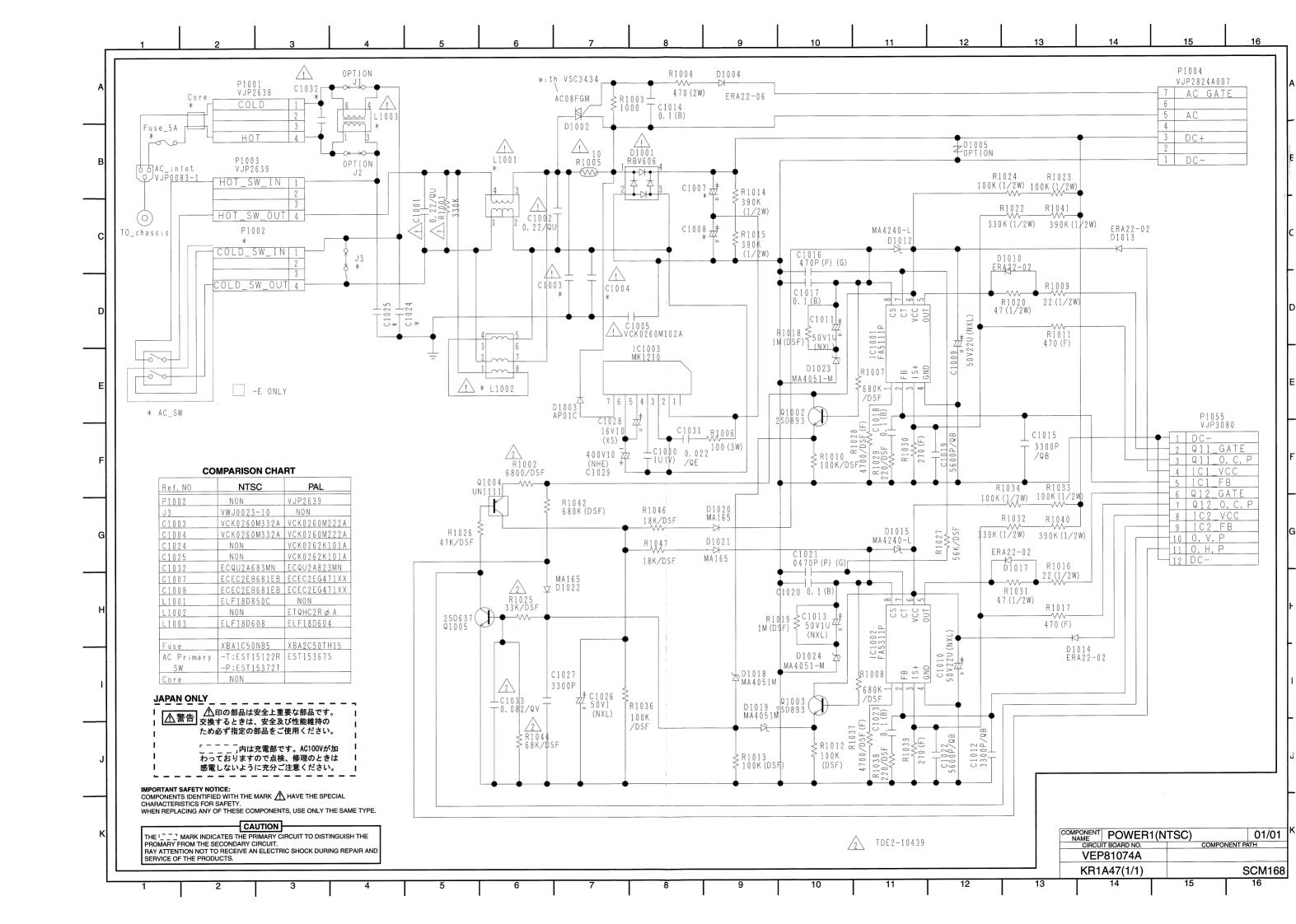


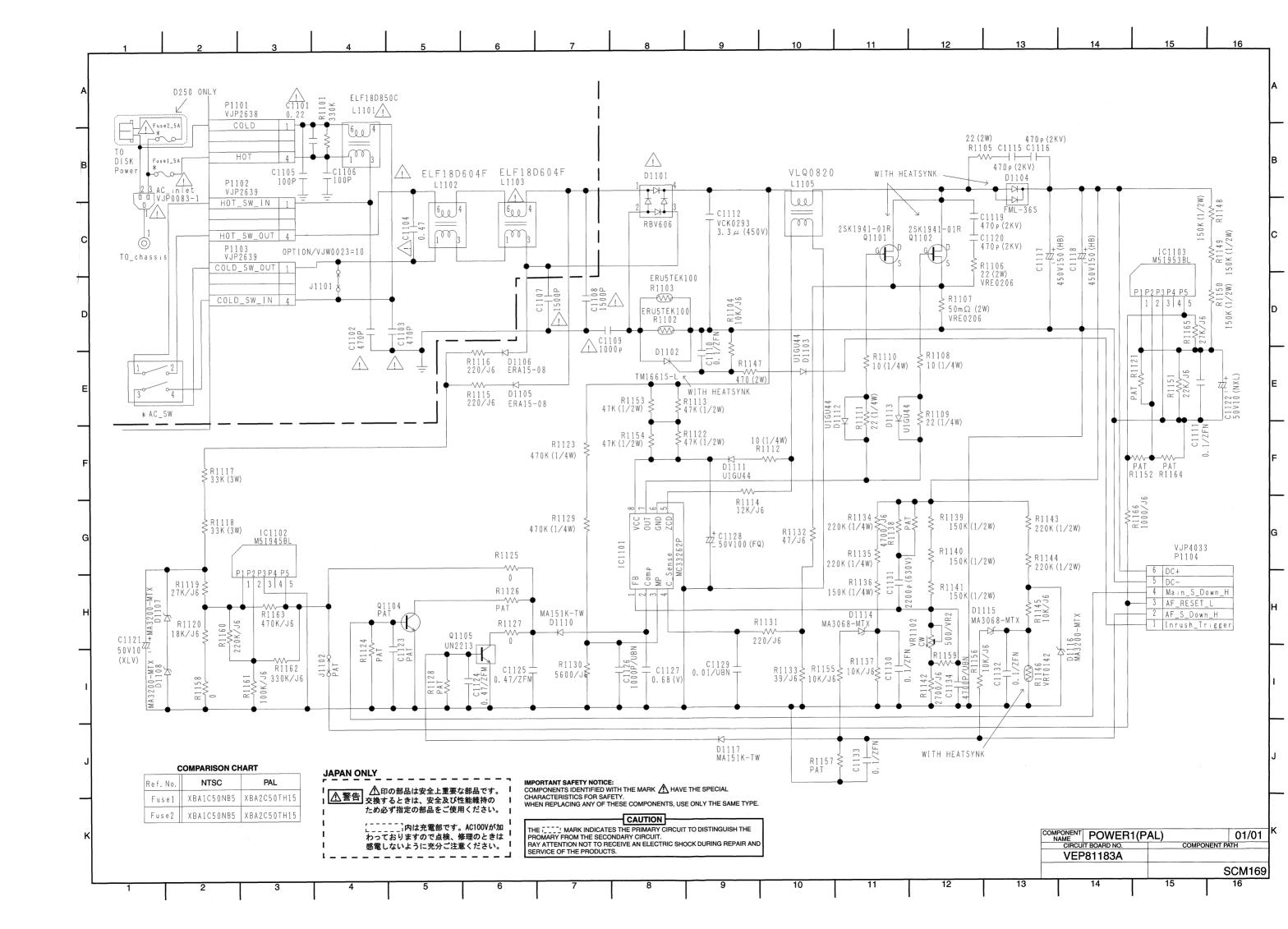


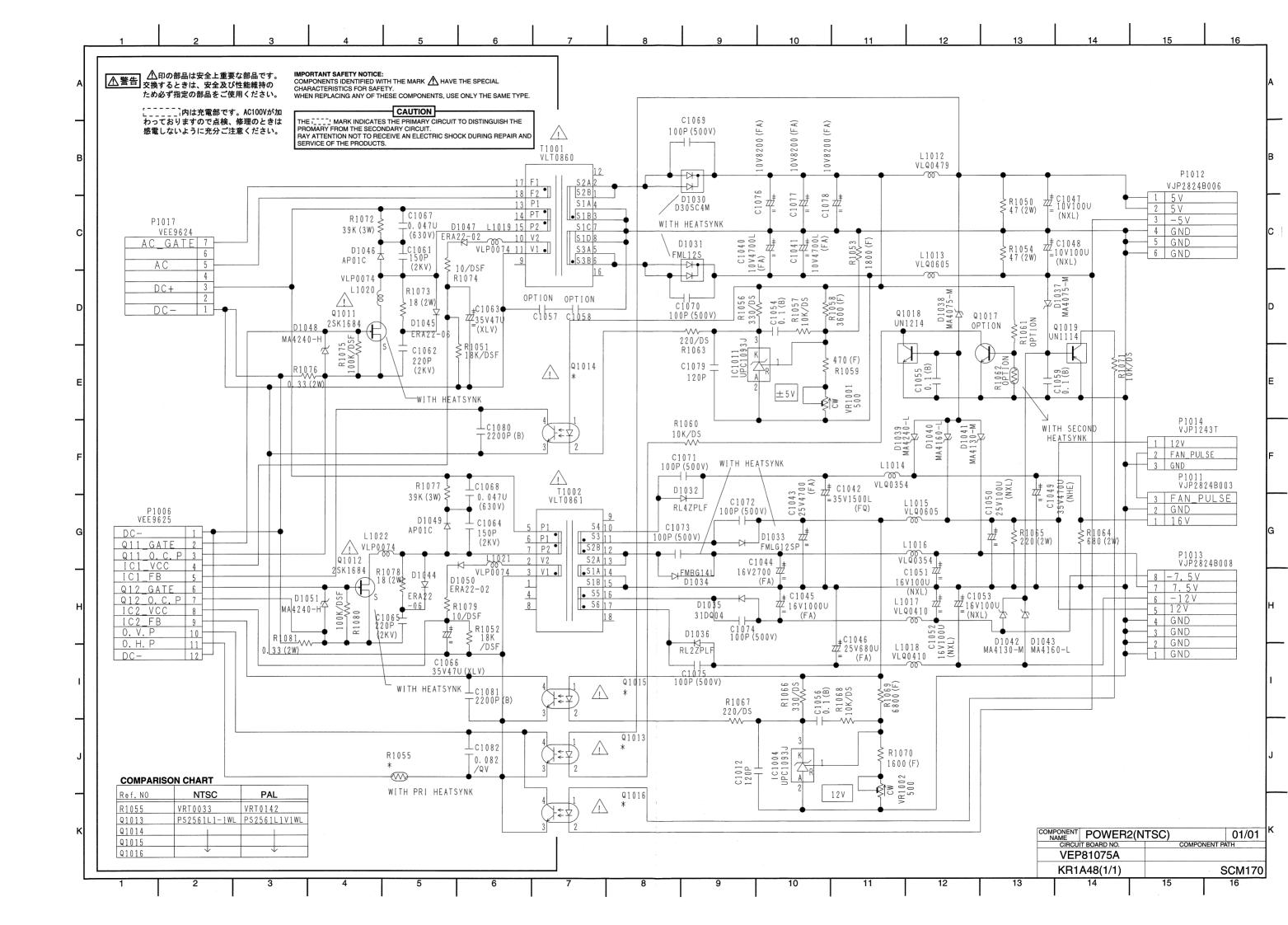


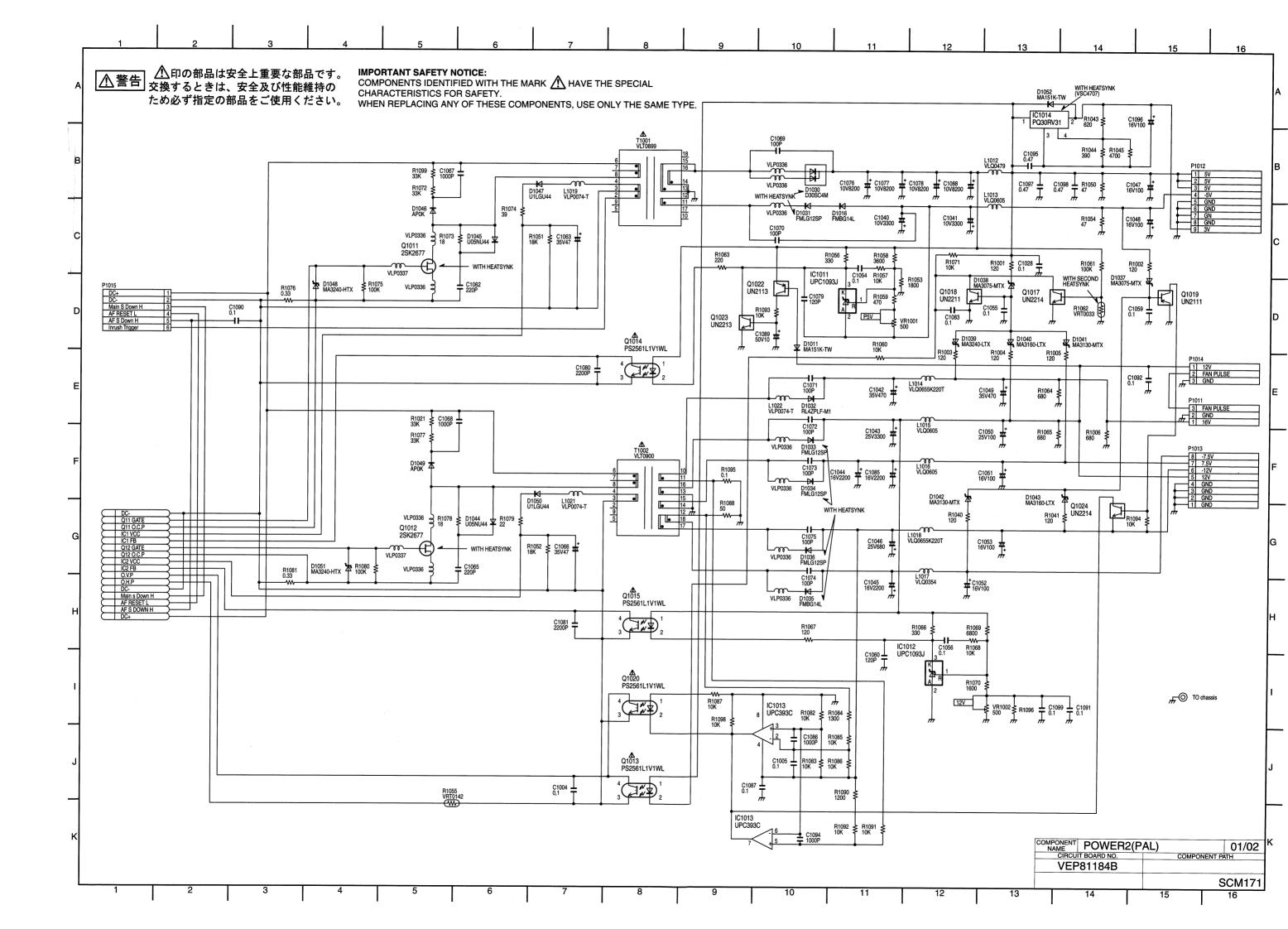


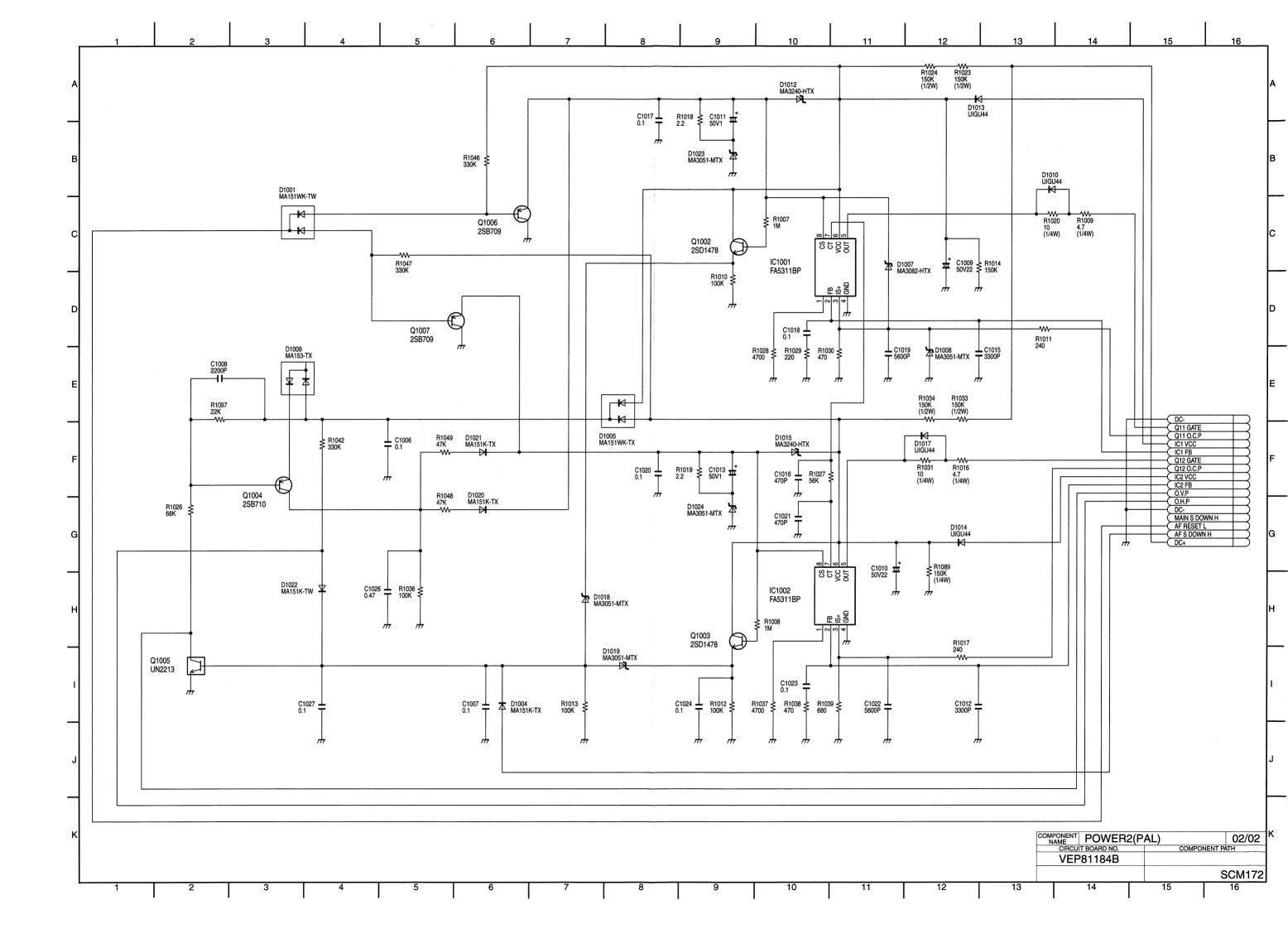


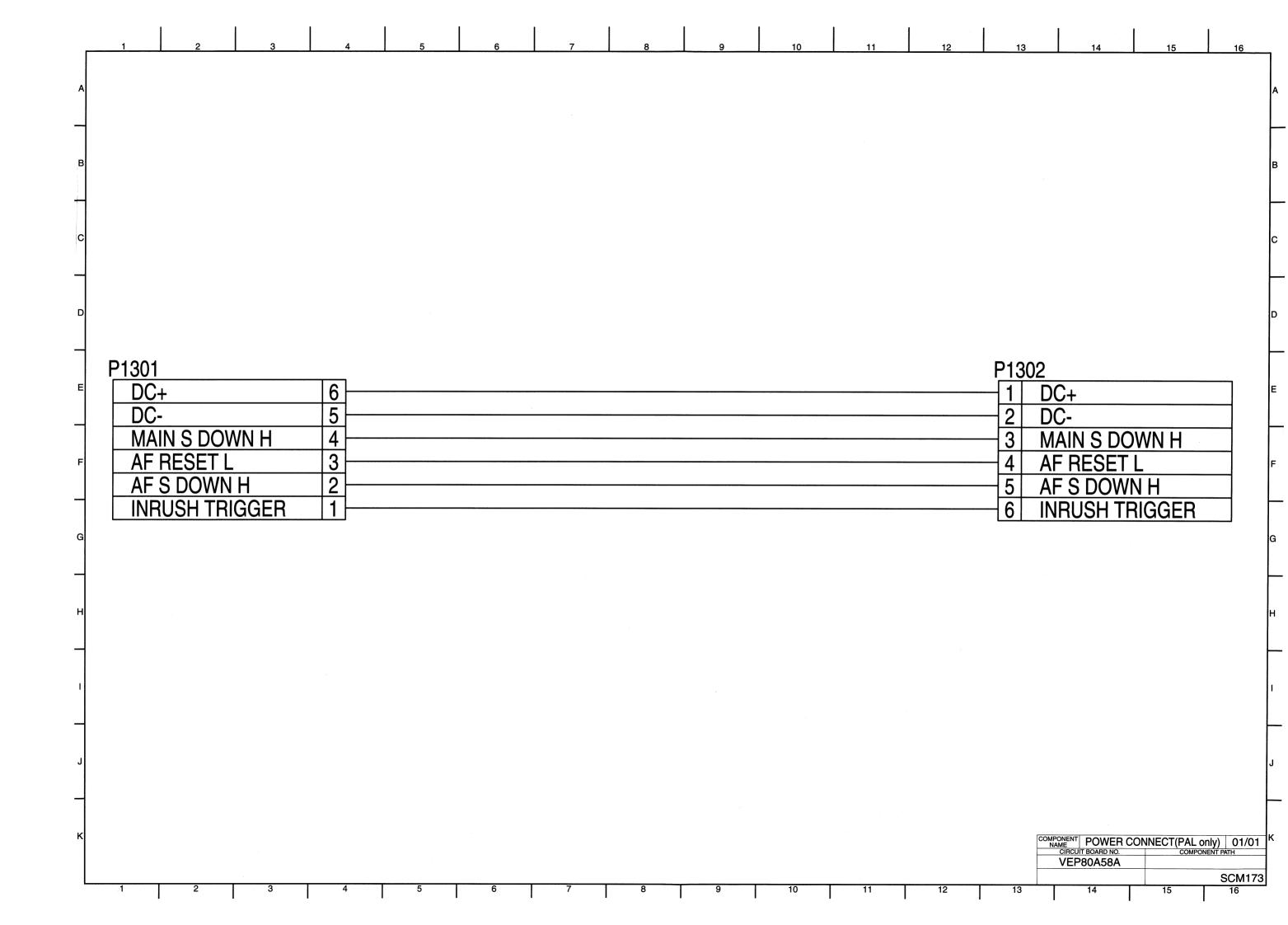


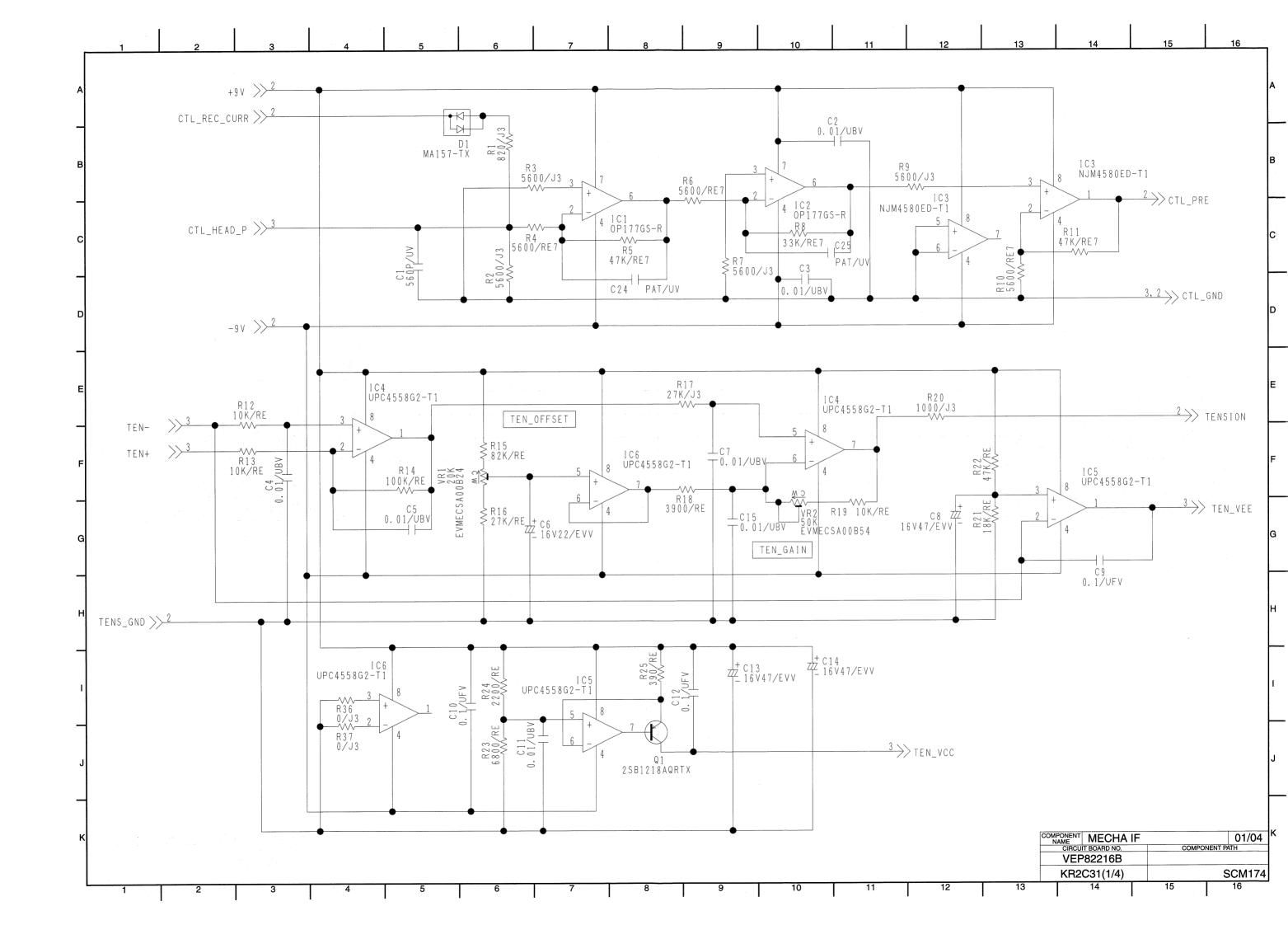


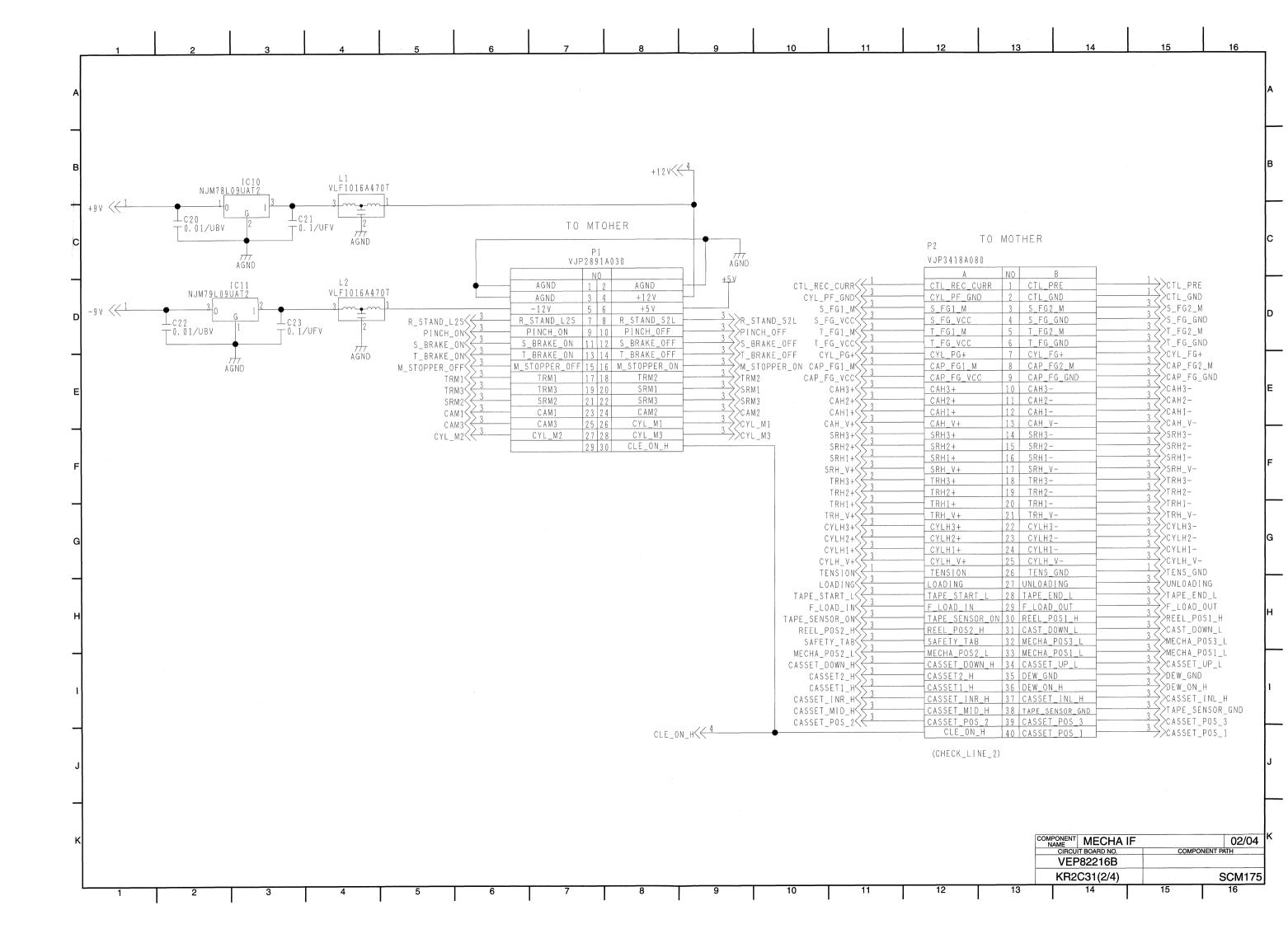


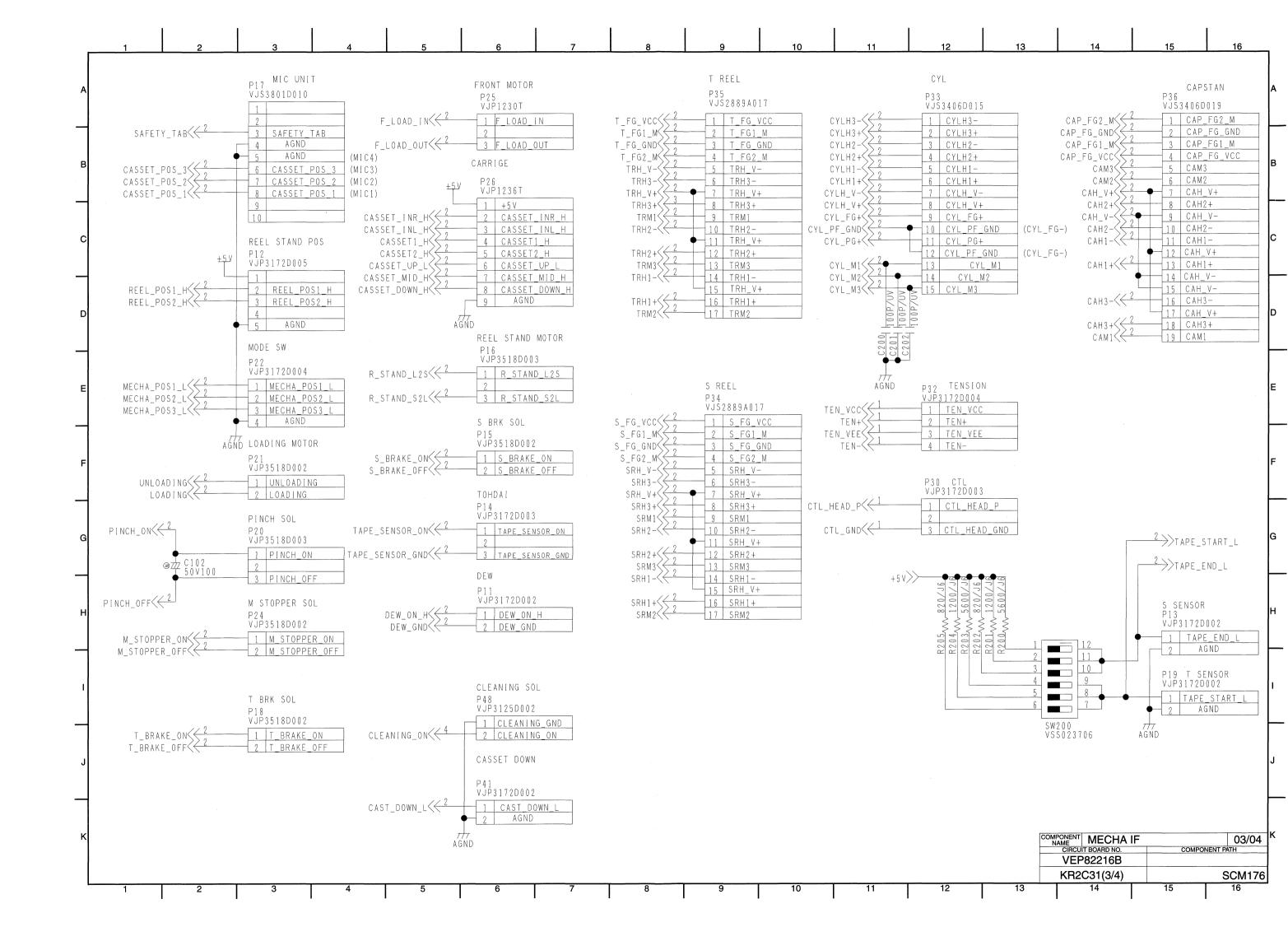


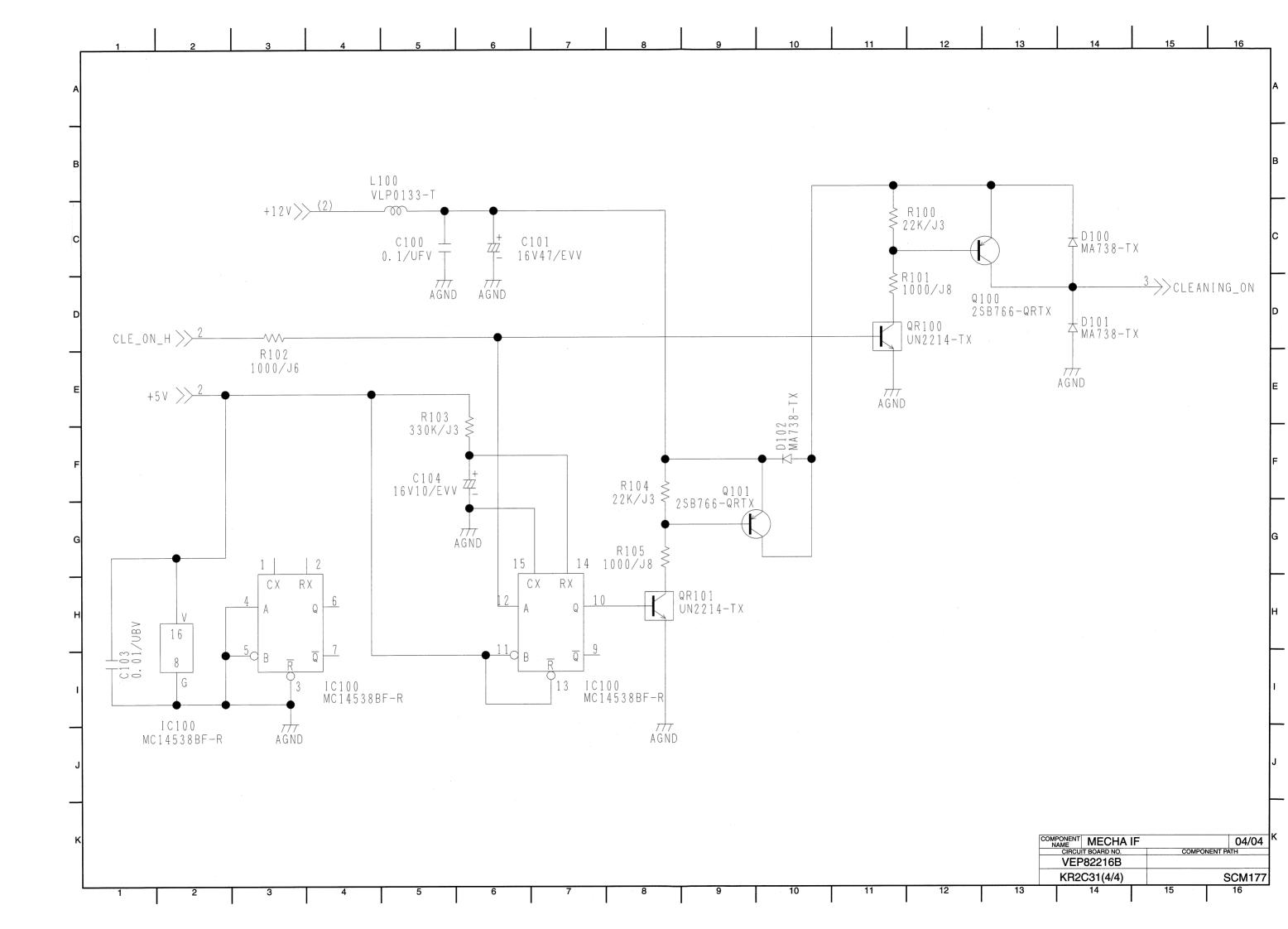


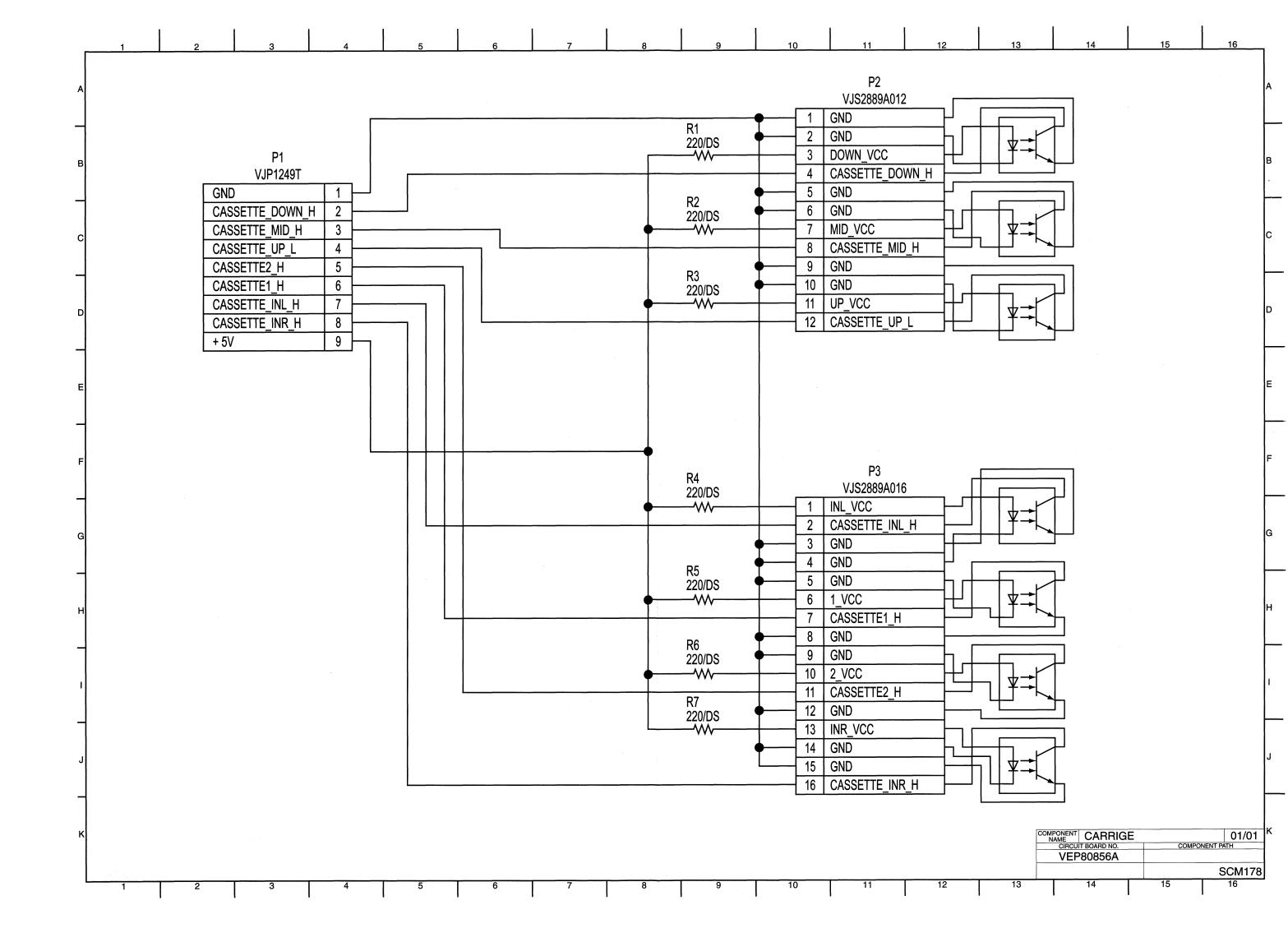


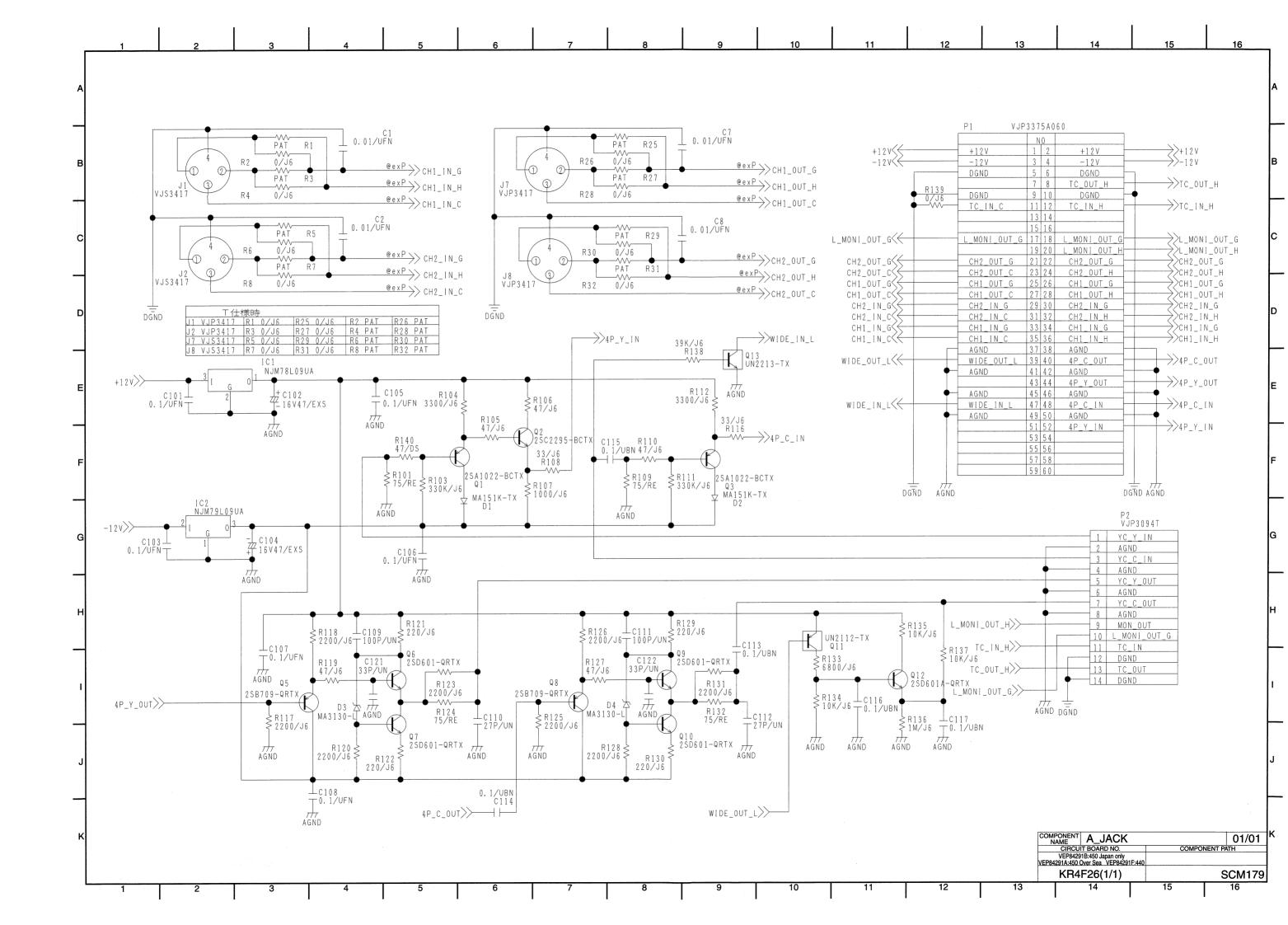


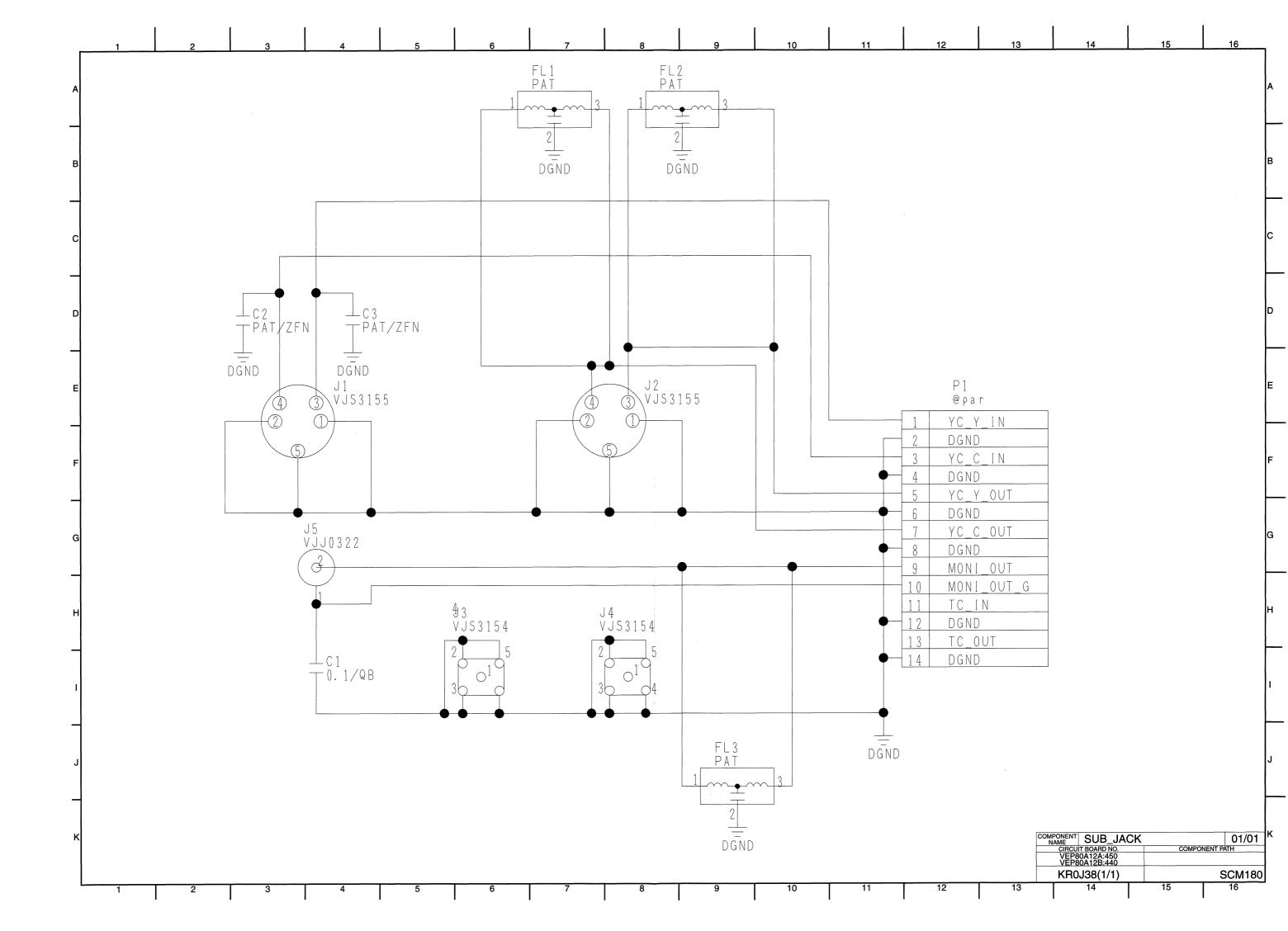


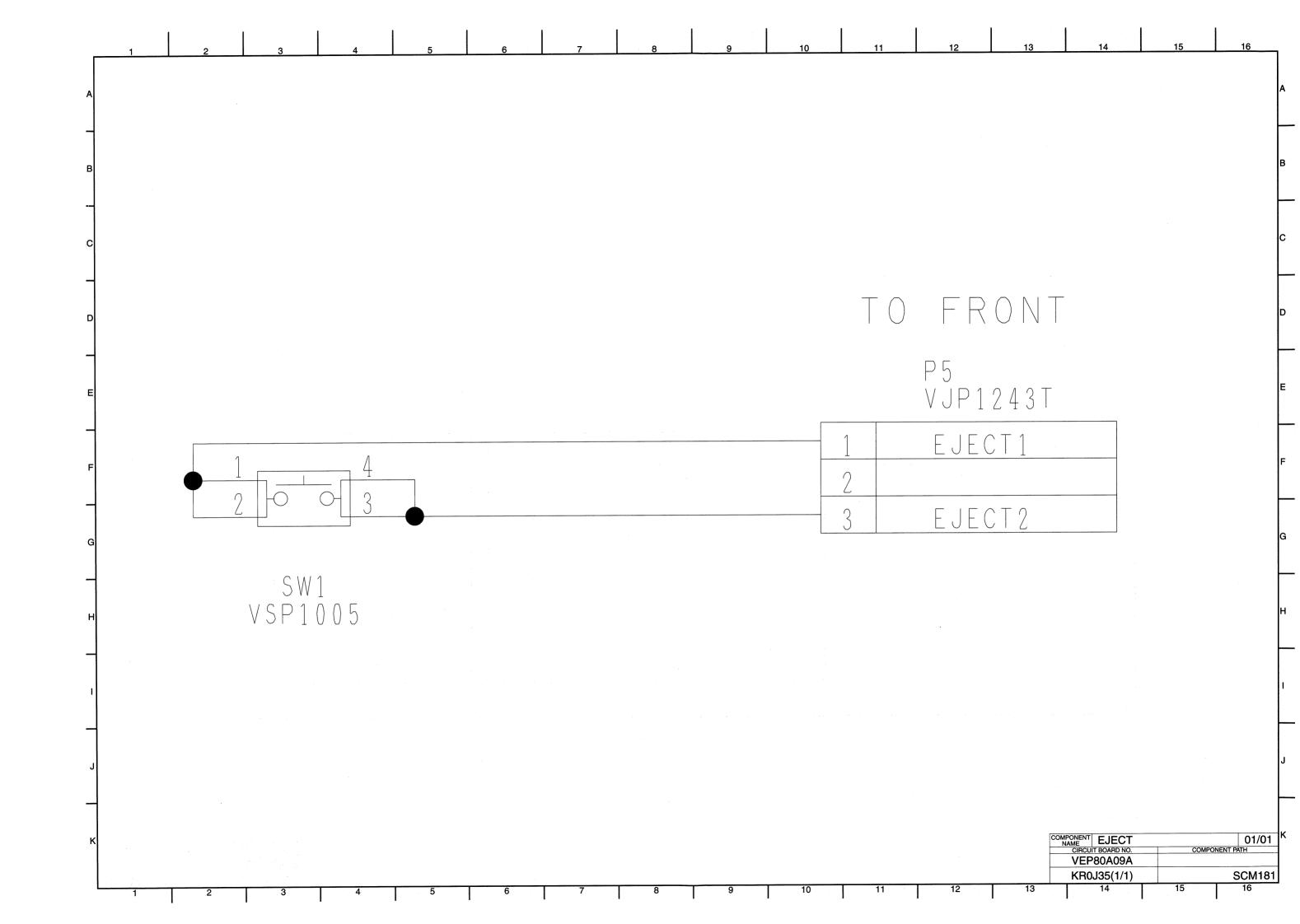


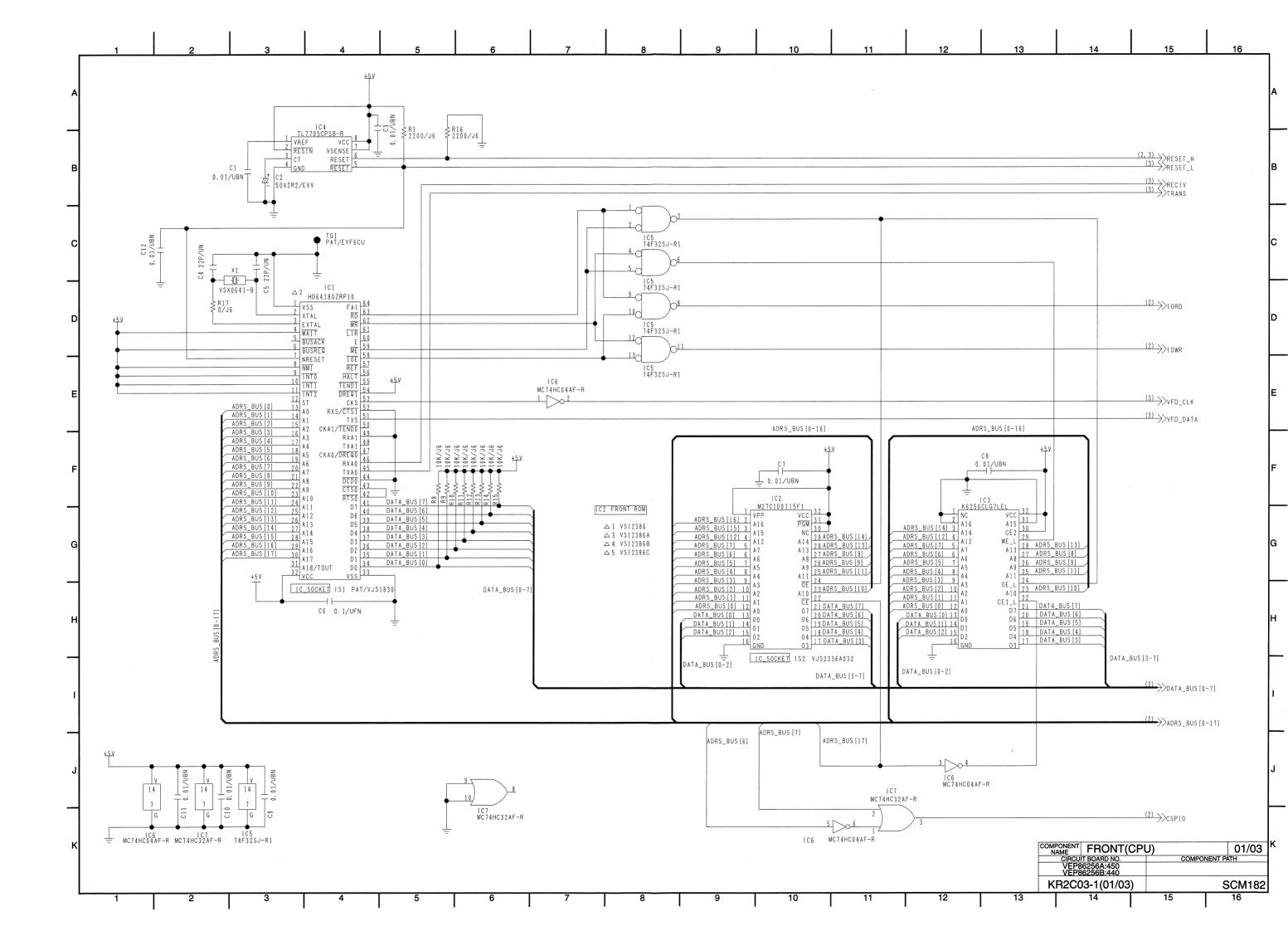


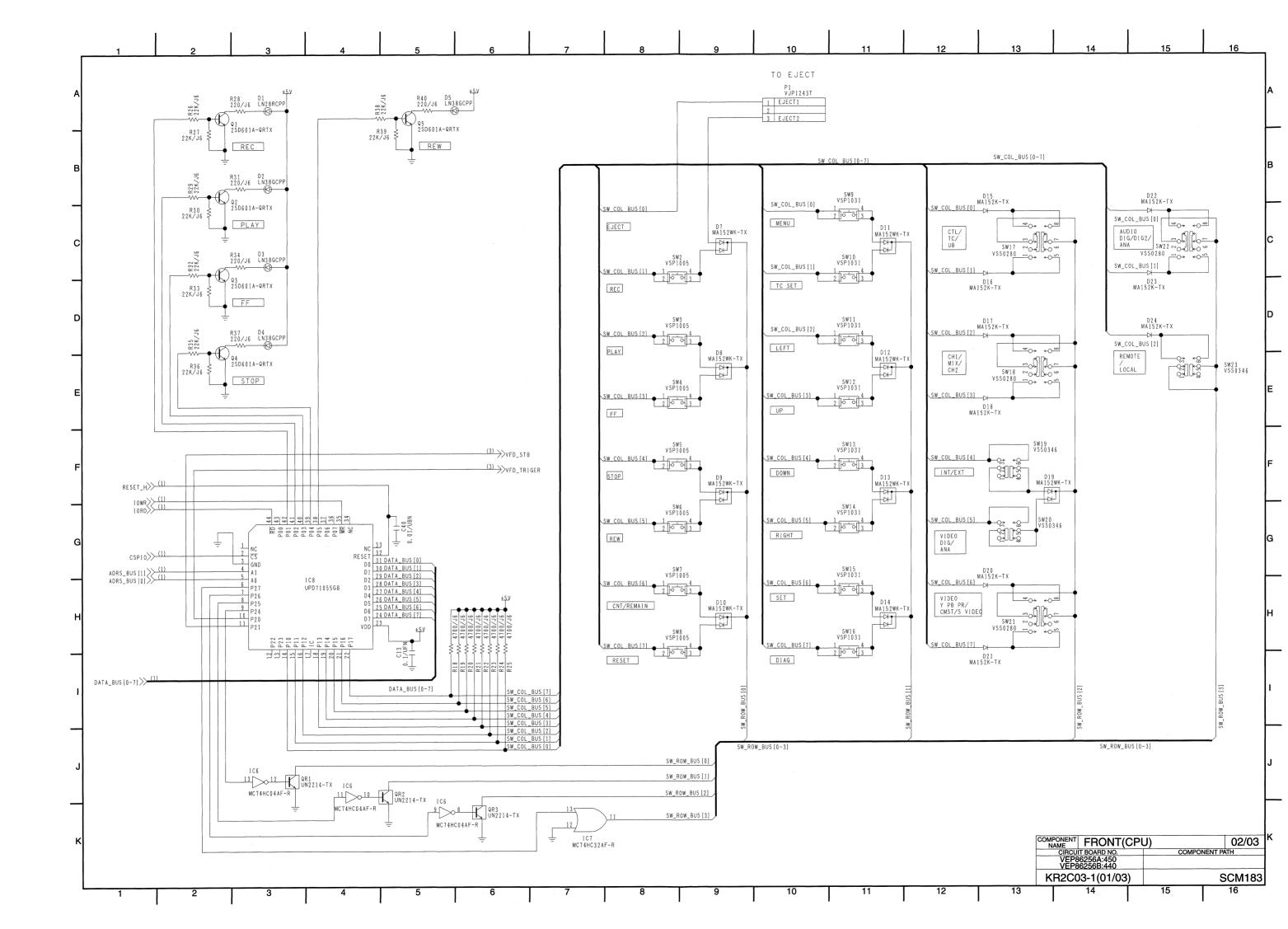


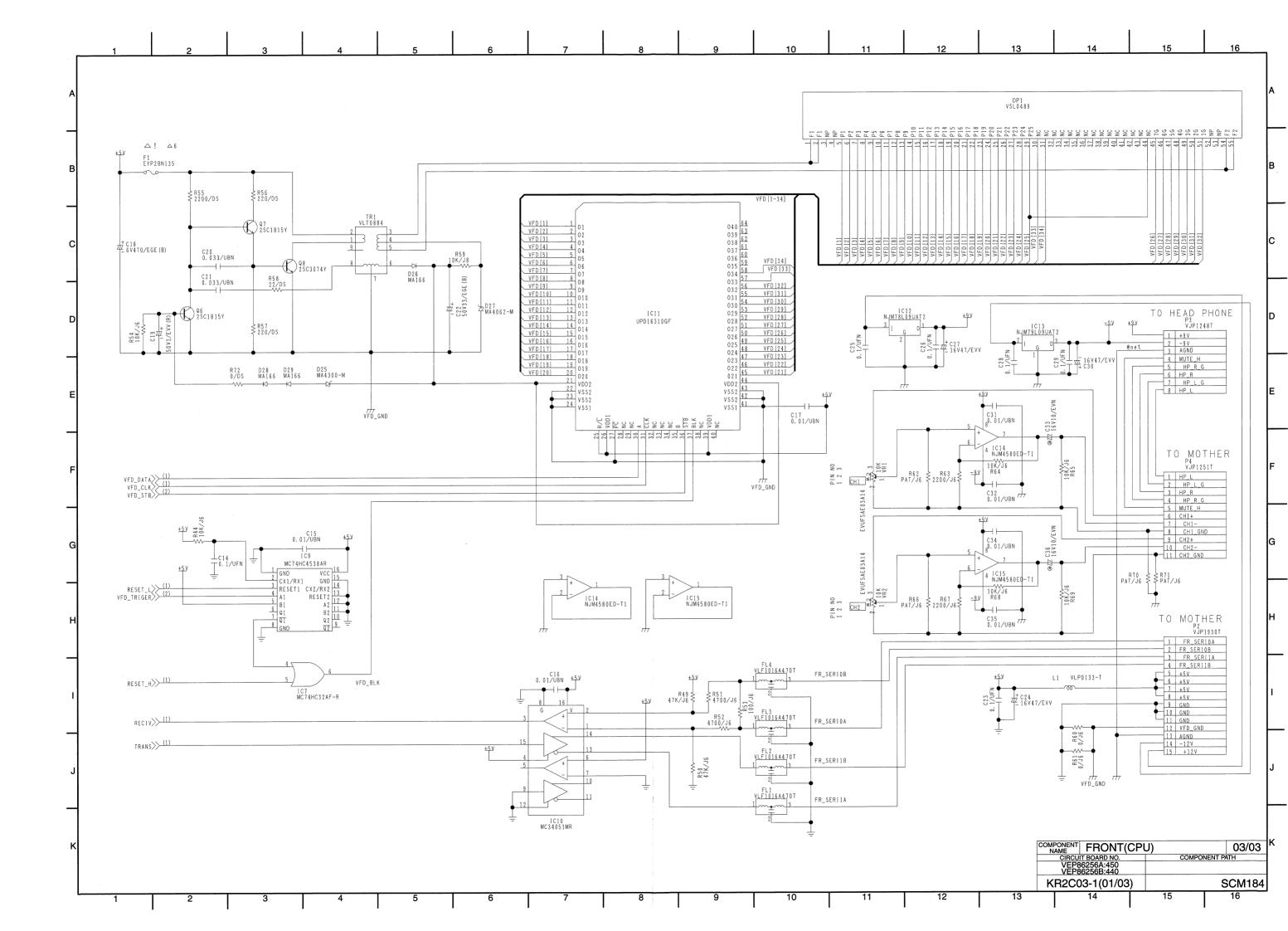


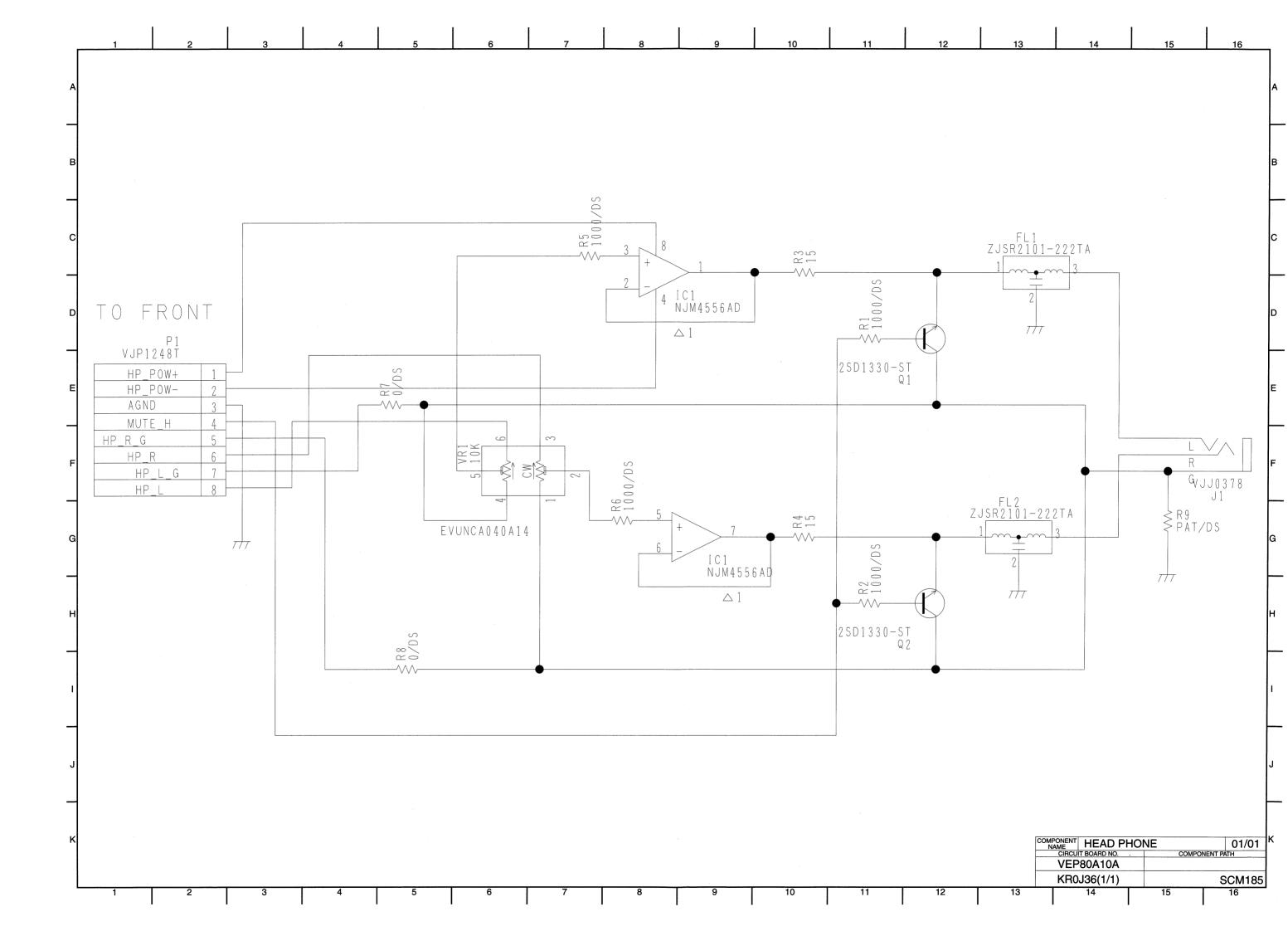












# SECTION 8

## **CIRCUIT BOARD DIAGRAMS**

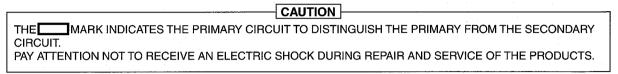
### **CONTENTS**

MOTHER P.C. BOARD (VEP80ATTA) · · · · · · PCB-1
F1: SERVO P.C. BOARD (NTSC: VEP82105F, PAL: VEP82105G) PCB-2
F2: SYSCON P.C. BOARD (VEP86146M: 450(NTSC), VEP86146P: 440(NTSC) VEP86146N
450(PAL), VEP86146Q: 440(PAL))······PCB-4
F4: V OUT P.C. BOARD (VEP83352A: Japan only, VEP83352C: NTSC, VEP83352B: PAL) · PCB-6
F5: REC PB P.C. BOARD (VEP83353D: NSTC, VEP83353E: PAL)
F6: V IN P.C. BOARD (VEP83397B: 450(NTSC), VEP83397A: Japan only) PCB-10
F6: V IN P.C. BOARD (VEP83398A: 450(PAL))
F7: A PROC P.C. BOARD (VEP84292A: 450, VEP84292D: 440) · · · · · PCB-14
F8: ADDA P.C. BOARD (VEP84293A: NTSC, VEP84293B: PAL)
FRONT CPU P.C. BOARD (VEP86256A: 450 and 440(PAL), VEP86256B: 440(NTSC)) · · · · PCB-18
EJECT P.C. BOARD (VEP80A09A) · · · · · PCB-18
H4: RF AMP P.C. BOARD (VEP85049A) · · · · · PCB-20
HEAD BUFFER P.C. BOARD (VEP85151A) · · · · · PCB-21
MECHA I/F P.C. BOARD (VEP82216B)
H3:EQ P.C. BOARD (VEP85048A)
POWER 1 P.C. BOARD (VEP81074A: NTSC)
POWER 2 P.C. BOARD (VEP81075A: NTSC)
POWER 1 P.C. BOARD (VEP81183A: PAL)
POWER 2 P.C. BOARD (VEP81184B: PAL)

#### NOTE:

DO NOT USE THE PART NUMBER SHOWN ON THIS DRAWING FOR ORDERING. THE CORRECT PART NUMBER SHOWN IN THE PARTS LIST.

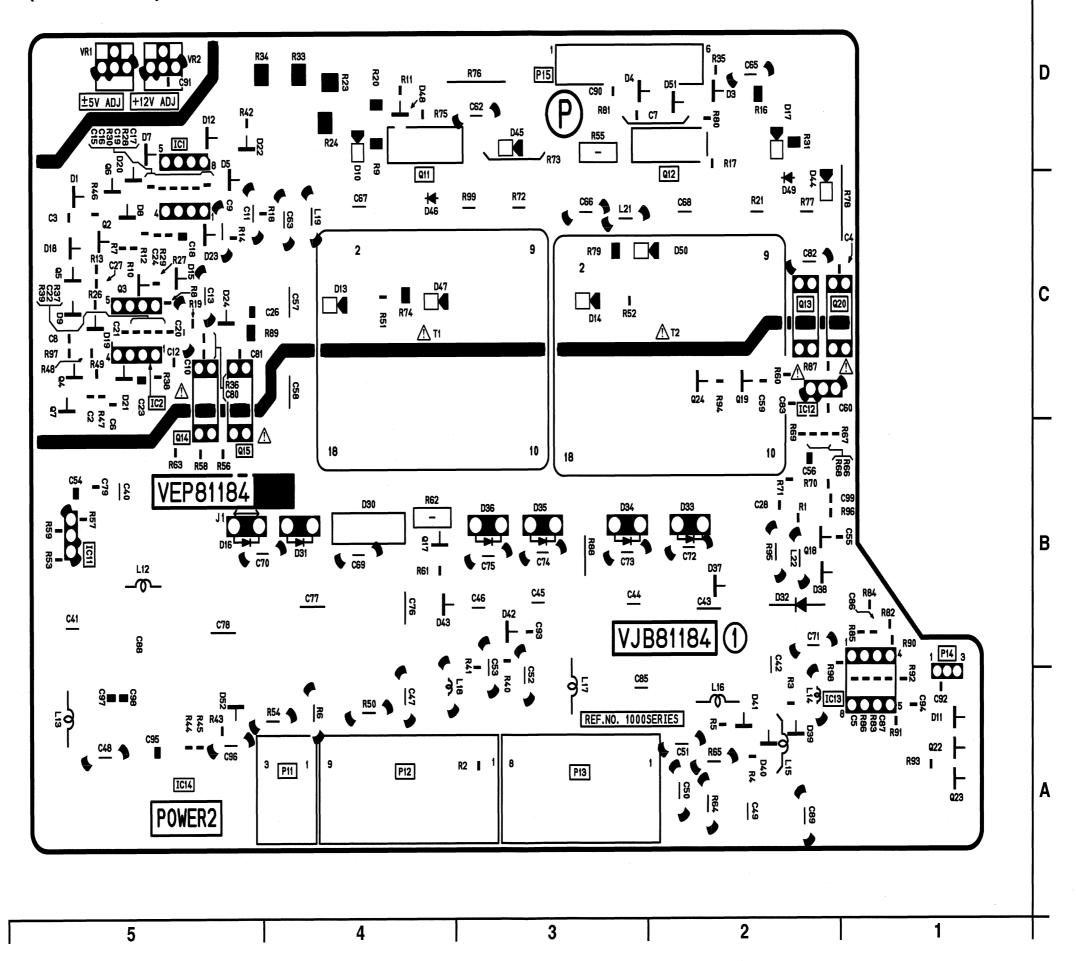
AND MAY BE SLIGHTLY DIFERENT OR AMENDED SINCE THIS DRAWING WAS PREPARED.



#### **IMPORTANT SAFETY NOTICE:**

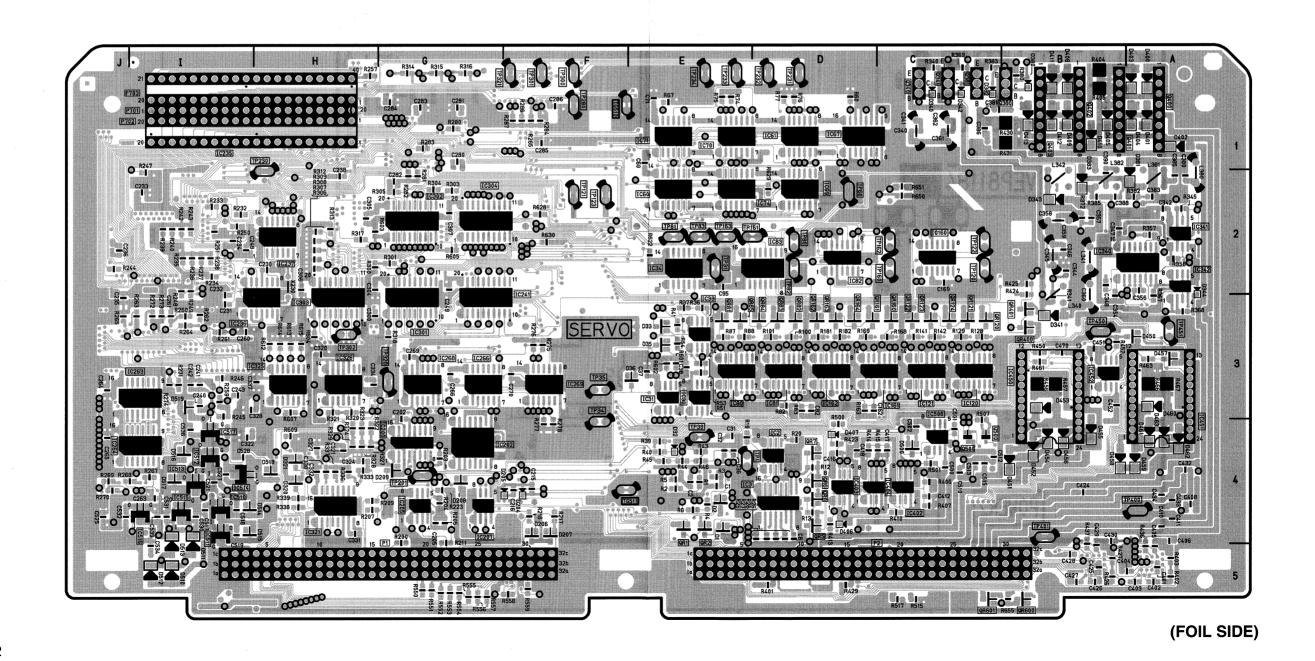
COMPONENTS IDENTIFIED WITH THE MARK  $\triangle$  HAVE THE SPECIAL CHARACTERISTICS FOR SAFETY. WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

## MOTHER P.C. BOARD (VEP80A11A)



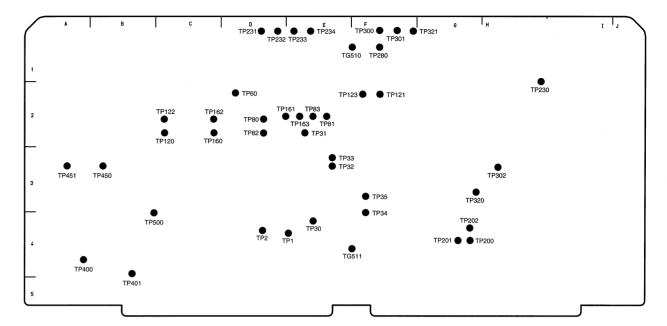
## F1: SERVO P.C. BOARD (VEP82105F: NTSC, VEP82105G: PAL)

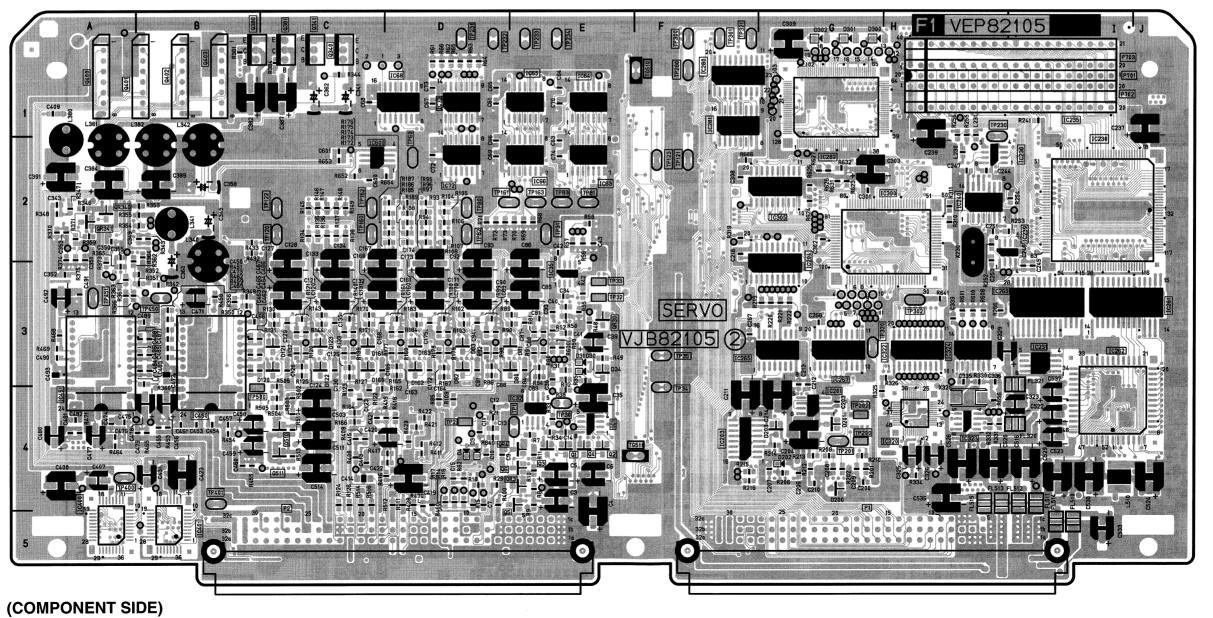
REF	LOC										
IC120	C3	IC264	14	IC33	E3	IC514	14	IC83	D2	QR2	E4
IC121	C3	IC266	G3	IC34	E2	IC515	14	Q500	C4	QR400	B3
IC160	C2	IC268	G3	IC340	A2	IC516	14	Q501	C4	QR401	B3
IC161	C3	IC269	F3	IC341	A2	IC517	14	QR1	E4	QR5	D4
IC162	D3	IC3	D4	IC342	A2	IC60	E2	QR120	C3	QR6	D4
IC2	D4	IC30	E3	IC402	C4	IC61	D1	QR121	C3	QR600	B5
IC200	G4	IC301	G3	IC403	D4	IC67	D1	QR122	C3	QR601	C5
IC202	G4	IC302	G2	IC404	D4	IC69	D2	QR123	C3	QR7	D4
IC205	G4	IC303	H3	IC452	B3	IC70	E1	QR124	C3	QR8	D4
IC207	G4	IC304	G2	IC500	C4	IC71	E1	QR160	C3	QR81	E3
IC236	H3	IC31	E3	IC510	14	IC74	E2	QR161	D3	QR82	D3
IC237	H2	IC321	H4	IC511	14	IC80	E3	QR162	D3	QR83	D3
IC241	G3	IC325	H3	IC512	14	IC81	D3	QR163	D3	QR84	D3
IC263	13	IC326	H3	IC513	14	IC82	D2	QR164	D3	QR85	E3



## F1: SERVO P.C. BOARD (VEP82105F: NTSC, VEP82105G: PAL)

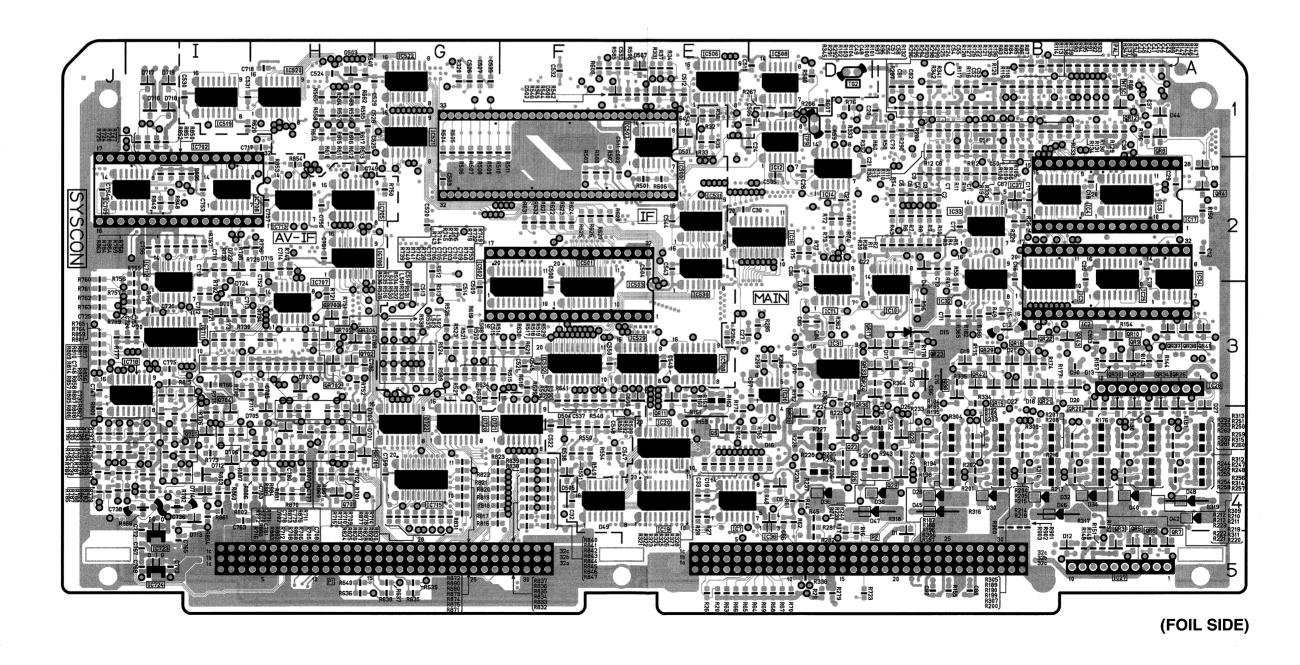
REF	LOC	REF	LOC								
IC1	E4	IC320	H4	P703	H1	QR4	E4	TP280	F1	TP83	E2
IC201	G4	IC322	H3	Q1	E4	TG510	F1	TP30	E4	X230	H2
IC203	F4	IC323	H4	Q2	E4	TG511	F4	TP300	F1	X320	H4
IC204	G3	IC324	H3	Q3	E4	TP1	E4	TP301	F1		
IC230	12	IC35	E3	Q340	C1	TP120	C2	TP302	H3		
IC231	13	IC400	A5	Q341	C1	TP121	F2	TP31	E2		
IC235	H1	IC401	B5	Q380	B1	TP122	C2	TP32	E3		
IC238	H2	IC450	B4	Q381	C1	TP123	F2	TP320	G3		
IC239	H2	IC451	A4	Q4	E4	TP160	C2	TP321	F1		
IC240	H2	IC600	C2	Q400	A1	TP161	D2	TP33	E3		
IC260	13	IC63	E2	Q401	B1	TP162	C2	TP34	F4		
IC261	13	IC64	E1	Q402	B1	TP163	E2	TP35	F3		
IC262	14	IC65	E1	Q403	B1	TP2	D4	TP400	A4		
IC265	G3	IC66	E2	Q5	E4	TP200	G4	TP401	B4		
IC267	G3	IC68	D1	Q510	C4	TP201	G4	TP450	B3		
IC280	F1	IC72	D2	Q511	C4	TP202	G4	TP451	A3		
IC281	F1	IC73	D1	Q6	E4	TP230	H2	TP500	B4		
IC282	G1	P1	G5	QR3	E4	TP231	D1	TP60	D2		
IC300	H2	P2	D5	QR30	E3	TP232	D1	TP80	D2		
IC305	G2	P701	I1	QR340	A2	TP233	E1	TP81	E2		
IC32	E4	P702	H1	QR341	A2	TP234	E1	TP82	D2		





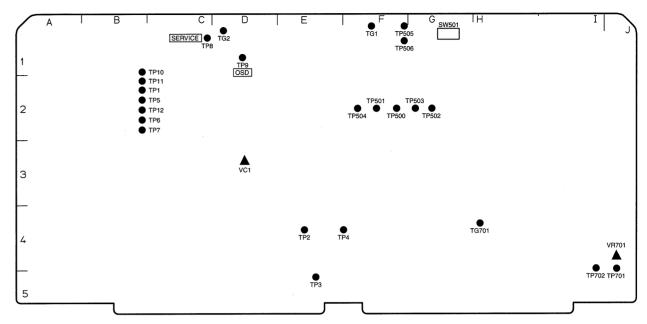
#### F2: SYSCON P.C. BOARD (VEP86146M: 450 (NTSC), VEP86146P: 440 (NTSC), VEP86146N: 450 (PAL), VEP86146Q: 440 (PAL))

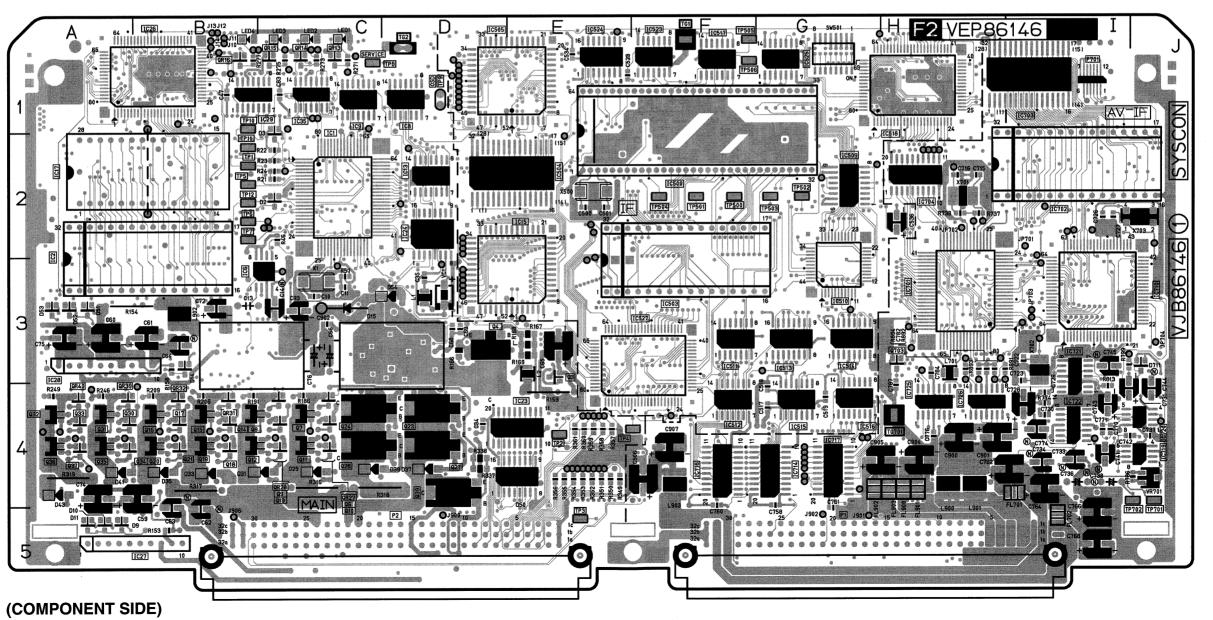
REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC
IC10	C2	IC36	D4	IC529	E3	IC718	13	QR11	E3	QR30	B4	QR702	H3
IC11	D2	IC37	B2	IC530	E2	IC723	15	QR12	B1	QR33	C3	QR703	H3
IC12	D1	IC4	B2	IC531	E2	IC724	15	QR17	C3	QR34	A4	QR704	H3
IC14	D2	IC5	A2	IC532	F3	Q22	D4	QR18	B3	QR35	D4	QR705	H3
IC16	D2	IC501	F2	IC7	E4	Q25	C4	QR19	C3	QR36	D4	QR8	A1
IC19	E4	IC502	F2	IC705	H2	Q26	D4	QR20	B4	QR37	A3	QR9	A3
IC20	E4	IC506	E1	IC706	H2	Q29	C4	QR21	B3	QR38	A3		
IC25	B2	IC507	E1	IC707	H3	Q38	C3	QR22	B3	QR4	A2		
IC3	B2	IC508	D1	IC708	12	Q5	E4	QR23	C3	QR41	A3		
IC30	D3	IC519	l1	IC709	12	Q701	H4	QR24	C3	QR42	C3		
IC31	D3	IC520	H1	IC711	13	Q702	H3	QR25	A4	QR5	A5		
IC32	C2	IC521	G1	IC712	12	Q704	14	QR26	A4	QR6	A5		
IC33	C2	IC522	G1	IC713	H2	Q705	14	QR29	C3	QR7	A5		
IC34	A2	IC528	E3	IC715	G4	QR10	B3	QR3	B5	QR701	H4		



# F2: SYSCON P.C. BOARD (VEP86146M: 450 (NTSC), VEP86146P: 440 (NTSC), VEP86146N: 450 (PAL), VEP86146Q: 440 (PAL))

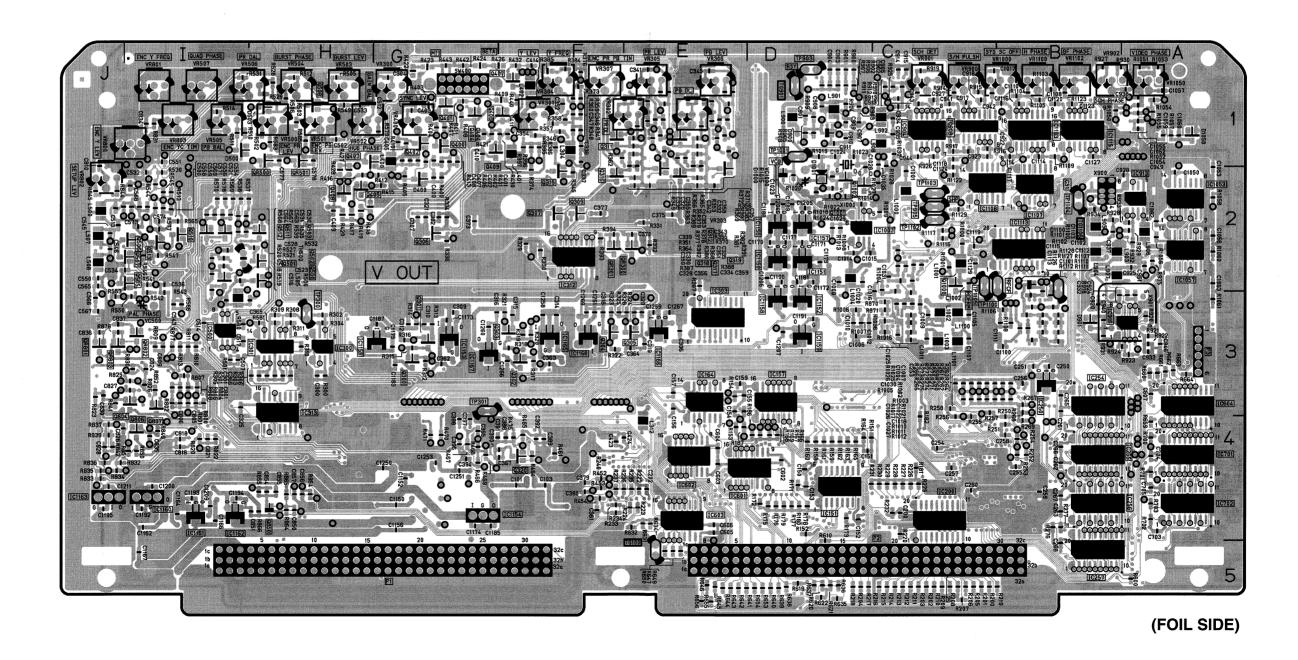
REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC
IC1	C2	IC514	G3	IC722	14	Q24	C4	QR15	C1	TP500	F2
IC13	D2	IC515	G4	IC725	H4	Q27	D4	QR16	B1	TP501	F2
IC15	E3	IC516	G4	IC726	H4	Q28	C4	QR27	C4	TP502	G2
IC17	A2	IC517	F1	IC8	D1	Q3	E3	QR28	C4	TP503	G2
IC2	A3	IC518	H1	IC9	C1	Q30	A4	QR31	B4	TP504	F2
IC23	E4	IC523	F1	P1	G5	Q31	A4	QR32	B4	TP505	F1
IC24	D2	IC524	E1	P2	D5	Q32	A4	QR39	A4	TP506	F1
IC26	B1	IC525	G1	P701	l1	Q33	A4	QR40	A4	TP6	B2
IC27	A5	IC527	F3	Q10	C4	Q34	A4	SW500	D1	TP7	B2
IC28	A3	IC6	C3	Q11	C4	Q35	A4	SW501	G1	TP701	J4
IC29	B1	IC701	H3	Q12	B4	Q36	A4	TG1	F1	TP702	J4
IC35	C1	IC702	H2	Q13	C4	Q37	A4	TG2	D1	TP8	C1
IC500	E2	IC703	11	Q14	B4	Q39	D4	TG701	H4	TP9	D1
IC503	E3	IC704	H2	Q15	B4	Q4	D3	TP1	B2	VC1	D3
IC504	E2	IC710	13	Q16	B4	Q6	C4	TP10	B1	VR701	J4
IC505	E1	IC714	G4	Q17	B4	Q7	C4	TP11	B2	X1	C3
IC509	G2	IC716	F4	Q18	B4	Q703	H3	TP12	B2	X500	E2
IC510	G3	IC717	G4	Q19	B4	Q8	B4	TP2	E4	X701	H2
IC511	F3	IC719	J4	Q20	B4	Q9	C4	TP3	E5	X702	13
IC512	F4	IC720	J4	Q21	B4	QR13	C1	TP4	F4	X703	J2
IC513	G3	IC721	13	Q23	D4	QR14	C1	TP5	B2		





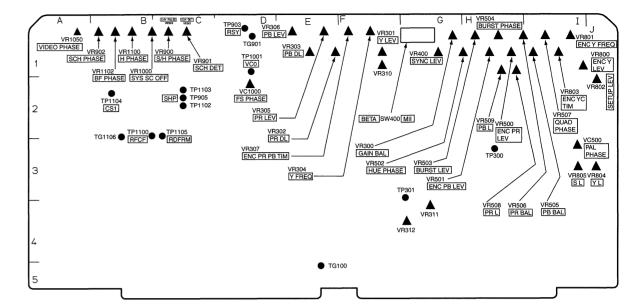
F4: V OUT P.C. BOARD (VEP83352A: Japan only, VEP83352C: NTSC, VEP83352B: PAL)

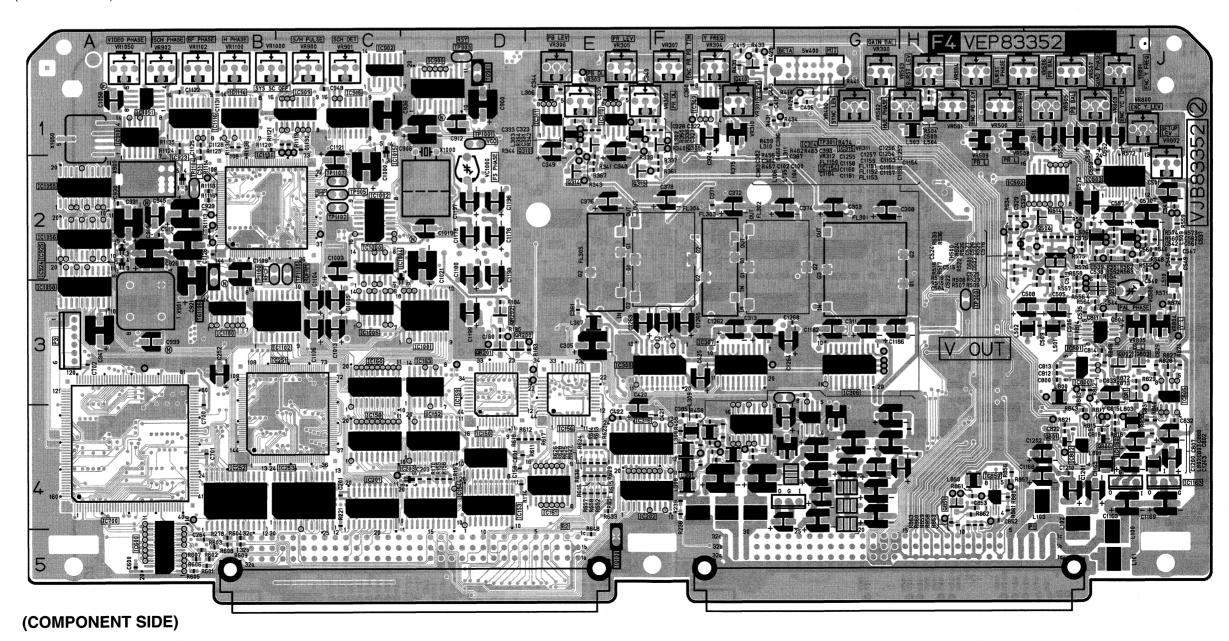
REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC
IC1003	D2	IC1157	D2	IC254	B3	IC701	A4	Q305	E3	Q402	G1	Q507	12	QR801	J3
IC1053	A2	IC1158	D3	IC255	B4	IC702	A4	Q306	G2	Q403	H1	Q508	H1	QR802	13
IC1057	A2	IC1159	D3	IC256	B4	IC904	C1	Q307	F2	Q404	G1	Q510	12	QR803	J3
IC1103	B1	IC1161	14	IC257	B5	IC908	C1	Q309	F2	Q405	H2	Q511	12		
IC1107	B2	IC1162	14	IC300	H3	IC913	A2	Q311	F1	Q406	F1	Q512	12		
IC1108	C2	IC1165	F3	IC301	H3	IC916	A3	Q312	E1	Q407	F1	Q513	12		
IC1113	B2	IC1166	E3	IC303	E3	Q1000	C2	Q315	F2	Q408	H2	Q804	13		
IC1115	B1	IC1167	G3	IC312	F2	Q1001	D2	Q316	F2	Q409	G1	Q806	14		
IC1150	D2	IC1168	F3	IC313	H3	Q1002	D2	Q317	E2	Q500	H2	Q807	13		
IC1151	D2	IC151	D4	IC500	13	Q300	G3	Q318	E2	Q501	12	Q850	H4		
IC1152	D3	IC157	D3	IC601	D4	Q301	G3	Q319	E2	Q502	H2	QR300	E2		
IC1153	G3	IC164	E3	IC602	E4	Q302	F3	Q320	F4	Q503	H2	QR301	F2		
IC1155	G3	IC200	C4	IC603	E4	Q303	F3	Q400	G1	Q505	12	QR500	H1		
IC1156	D2	IC250	B3	IC604	A3	Q304	F3	Q401	G1	Q506	12	QR501	H1		



# F4: V OUT P.C. BOARD (VEP83352A: Japan only, VEP83352C: NTSC, VEP83352B: PAL)

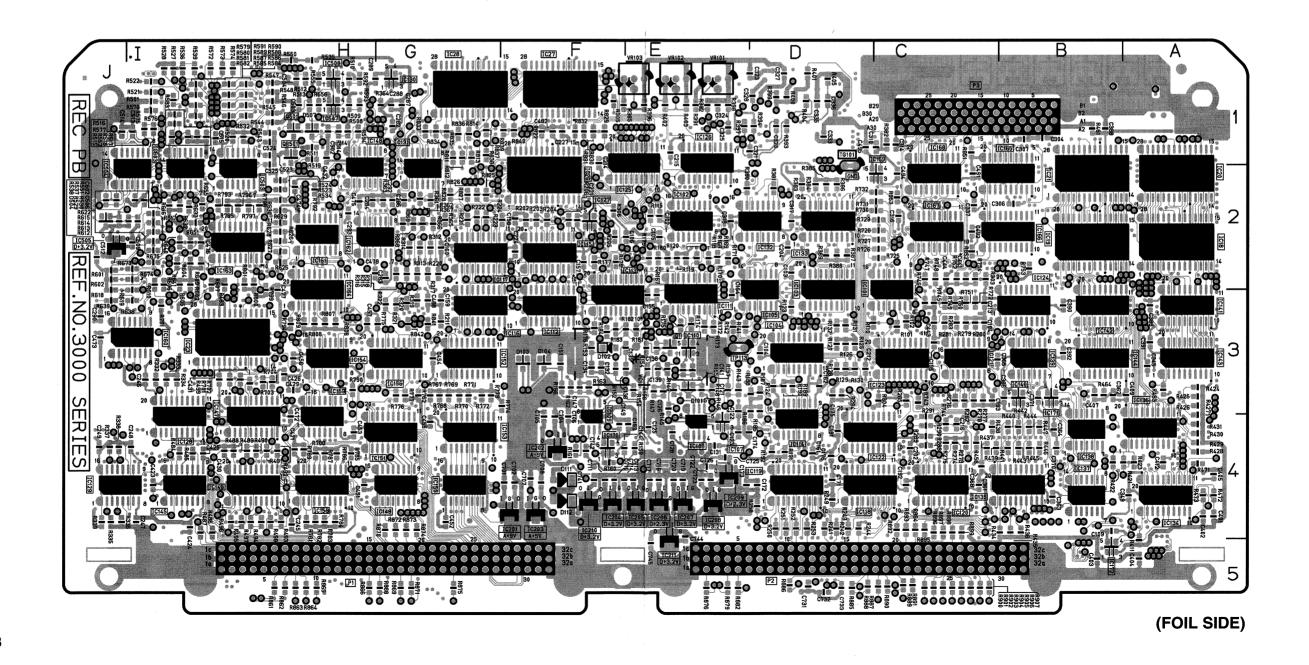
REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC
IC1000	C2	IC153	D4	IC314	F4	P1	G5	SW400	G1	VR300	G1	VR508	H1
IC1001	D3	IC154	D4	IC315	G4	P2	D5	TG100	E5	VR301	F1	VR509	H1
IC1002	C2	IC156	E3	IC316	E4	P3	A3	TG1106	B3	VR302	E1	VR800	l1
IC1004	C3	IC158	C4	IC502	12	Q308	F1	TG901	D1	VR303	E1	VR801	1
IC1005	C3	IC159	D3	IC503	12	Q310	E1	TP1001	D1	VR304	F1	VR802	J2
IC1015	C2	IC160	C3	IC600	B5	Q313	E2	TP1100	B2	VR305	E1	VR803	l1
IC1051	A1	IC161	E4	IC700	A4	Q314	E2	TP1102	C2	VR306	E1	VR804	J3
IC1055	A2	IC163	D3	IC800	13	Q410	F1	TP1103	C2	VR307	F1	VR805	13
IC1056	A2	IC201	C4	IC801	13	Q504	12	TP1104	B2	VR310	F1	VR900	C1
IC1058	A3	IC202	E4	IC802	14	Q509	13	TP1105	C2	VR311	G4	VR901	C1
IC1100	B3	IC203	D4	IC805	J3	Q514	12	TP300	H3	VR312	G4	VR902	B1
IC1102	B3	IC251	C4	IC850	H4	Q800	14	TP301	G3	VR400	G1	X1000	D2
IC1106	B2	IC252	B4	IC900	D1	Q801	14	TP903	D1	VR500	H1	X1050	A1
IC1114	B1	IC253	C4	IC902	C1	Q802	13	TP905	C2	VR501	H1	X900	A2
IC1116	B1	IC306	G3	IC909	C1	Q803	13	VC1000	D2	VR502	H1	X901	B3
IC1154	G4	IC307	F3	IC910	A1	Q851	H4	VC500	13	VR503	H1		
IC1160	14	IC308	F3	IC915	C1	QR1	14	VR1000	B1	VR504	H1		
IC1163	J4	IC309	F1	IC923	B2	QR200	D3	VR1050	A1	VR505	l1		
IC150	D4	IC310	E1	IC924	A2	QR201	D3	VR1100	B1	VR506	l1		
IC152	D4	IC311	E1	IC925	A2	QR202	D3	VR1102	B1	VR507	l1		





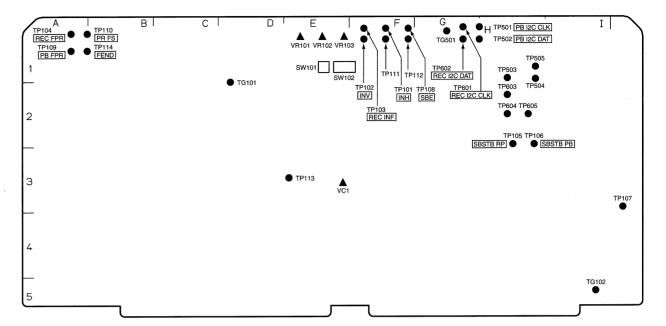
F5: REC PB P.C. BOARD (VEP83353D: NTSC, VEP83353E: PAL)

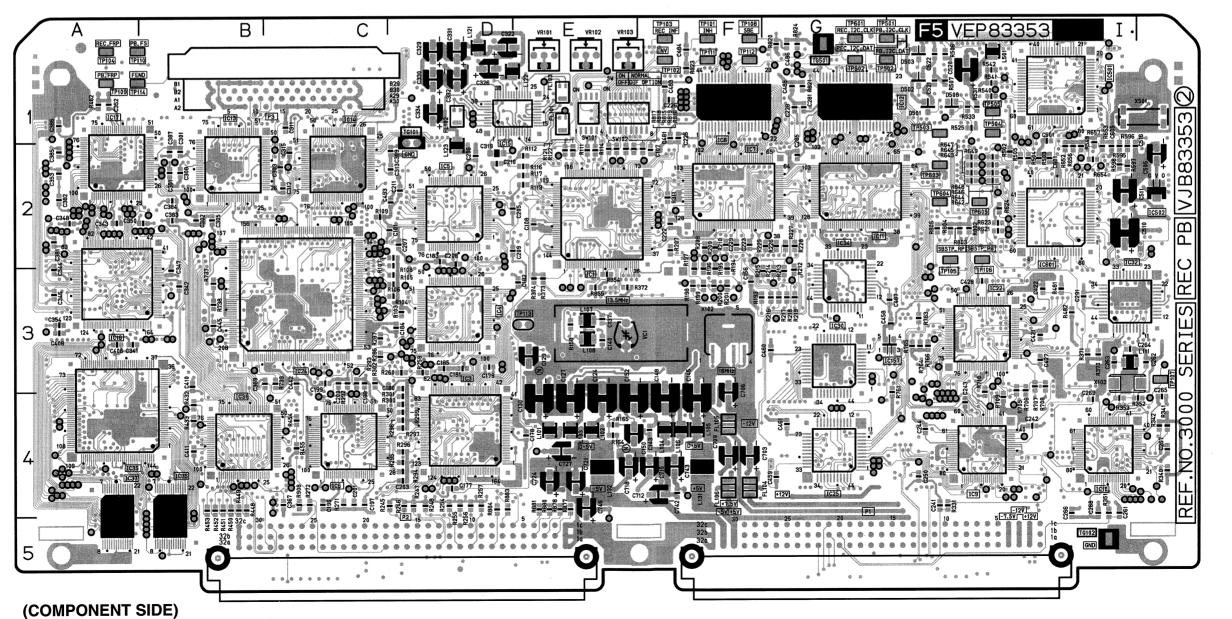
REF	LOC	REF	LOC	REF	LOC	REC	LOC	REC	LOC	REC	LOC	REC	LOC
IC101	C3	IC116	G3	IC130	G1	IC144	B3	IC160	13	IC19	B2	IC23	13
IC102	E2	IC117	G2	IC131	G2	IC145	14	IC161	H2	IC20	A2	IC26	F2
IC103	D3	IC118	D4	IC132	D2	IC146	H4	IC162	H2	IC201	F4	IC27	F1
IC104	D3	IC119	D4	IC133	D2	IC147	H4	IC163	12	IC202	F4	IC28	G1
IC105	D3	IC120	C4	IC134	A4	IC148	H2	IC164	H3	IC203	F4	IC503	12
IC107	E4	IC121	C3	IC135	B4	IC149	G4	IC165	B2	IC204	F4	IC504	12
IC108	E4	IC122	D4	IC136	A4	IC150	G4	IC166	B2	IC205	E4	IC505	J2
IC109	F4	IC123	C3	IC137	B4	IC151	G4	IC167	C2	IC206	E4	IC507	H1
IC110	E3	IC124	B3	IC138	B4	IC152	G3	IC168	C2	IC207	E4	IC508	H1
IC111	E3	IC125	E2	IC139	B3	IC153	G4	IC169	C2	IC208	E4	IC603	12
IC112	F3	IC126	E2	IC140	B3	IC154	H3	IC170	F4	IC209	E4	Q1	E3
IC113	F3	IC127	F2	IC141	A3	IC156	G3	IC171	B3	IC21	B2	Q501	H1
IC114	D4	IC128	14	IC142	B3	IC158	H4	IC172	B5	IC210	F4	QR501	H1
IC115	F2	IC129	J4	IC143	A3	IC159	H4	IC18	A2	IC211	E5		



#### F5: REC PB P.C. BOARD (VEP83353D: NTSC, VEP83353E: PAL)

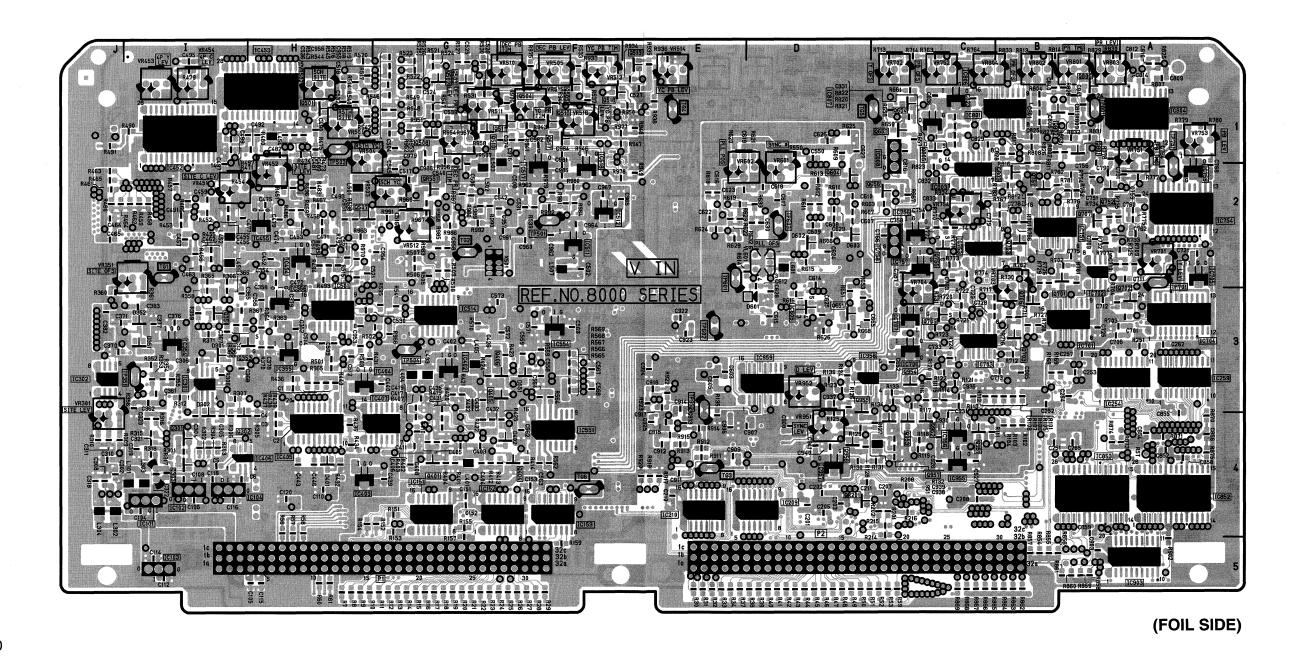
REF	LOC	REC	LOC	REC	LOC	REC	LOC	REC	LOC
IC1	E2	IC30	G3	IC8	F1	TP105	H2	TP505	H1
IC10	14	IC31	C4	IC9	H4	TP106	H2	TP601	G1
IC11	G2	IC32	13	P1	G5	TP107	J3	TP602	G1
IC12	G1	IC34	G3	P2	D5	TP108	F1	TP603	H2
IC13	B2	IC35	A4	P3	C1	TP109	A1	TP604	H2
IC14	C2	IC36	B5	SW101	E1	TP110	A1	TP605	H2
IC15	D1	IC37	A5	SW102	E1	TP111	F1	VC1	E3
IC157	H3	IC4	D3	TG101	D2	TP112	F1	VR101	E1
IC16	A3	IC5	D2	TG102	15	TP113	E3	VR102	E1
IC17	A2	IC501	11	TG501	G1	TP114	A1	VR103	E1
IC22	H3	IC502	J2	TP101	F1	TP501	H1	X102	F3
IC24	C3	IC6	C4	TP102	F1	TP502	H1	X103	13
IC25	G4	IC601	12	TP103	F1	TP503	H1	X501	J1
IC3	D4	IC7	F2	TP104	A1	TP504	H1		





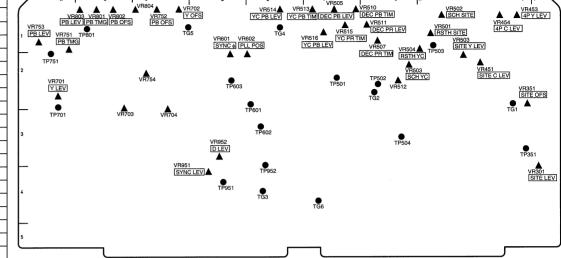
F6: V IN P.C. BOARD (VEP83397B: 450 (NTSC), VEP83397A: Japan only)

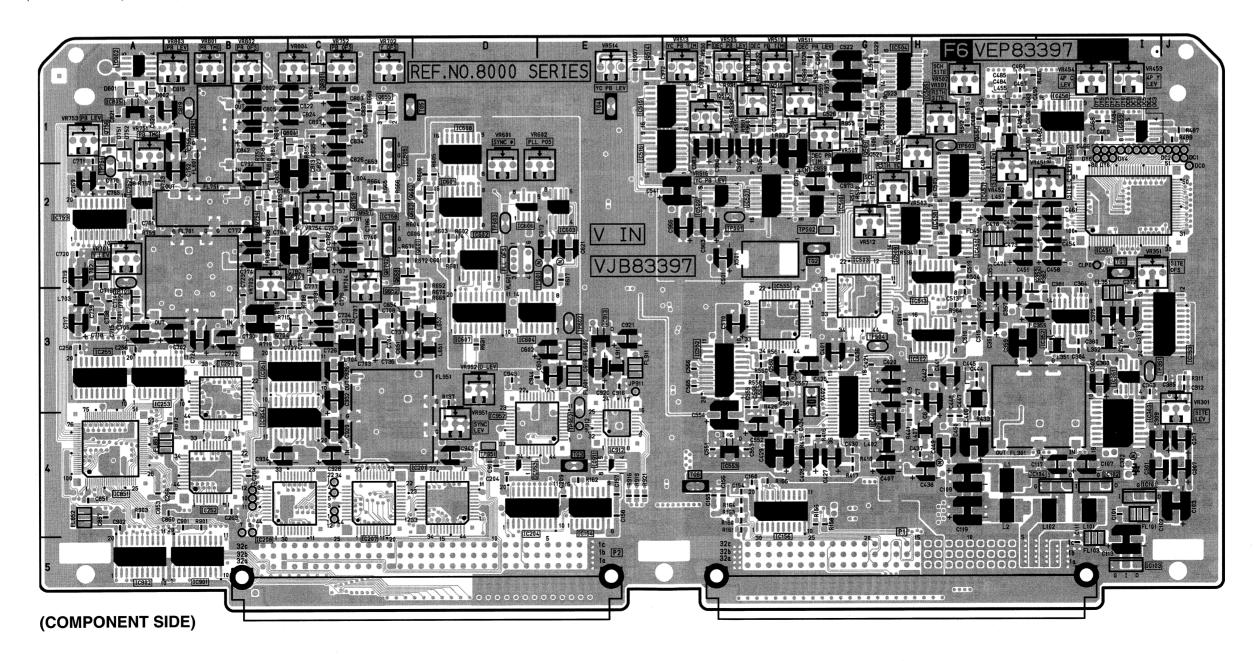
REF	LOC	REC	LOC	REC	LOC	REC	LOC								
IC404	НЗ	IC151	G4	IC551	F4	IC756	C2	IC959	D3	Q505	F1	Q701	B2	Q806	B1
IC405	H4	IC152	F4	IC554	F3	IC757	C2	Q301	14	Q507	H2	Q702	A3	Q951	C4
IC406	14	IC153	F4	IC605	D3	IC801	B1	Q302	14	Q508	G1	Q703	B3	Q952	C4
IC407	G4	IC209	D4	IC701	B3	IC803	C2	Q303	14	Q510	G1	Q705	C3	Q953	C4
IC452	11	IC210	E4	IC702	B2	IC804	A1	Q351	13	Q511	F1	Q706	B3	Q954	C3
IC453	H1	IC254	A3	IC703	C3	IC806	C1	Q353	H3	Q513	E1	Q707	B2	Q955	D3
IC454	H2	IC259	A3	IC704	A3	IC807	C1	Q401	G4	Q516	F1	Q751	B2	Q956	D4
IC455	H2	IC301	13	IC705	A2	IC852	A4	Q404	F4	Q517	F1	Q752	B2	Q957	C4
IC501	НЗ	IC302	J3	IC706	C3	IC853	B4	Q405	F3	Q518	F1	Q753	B2	QR201	D4
IC511	F2	IC354	13	IC707	C3	IC903	A5	Q406	F3	Q604	D2	Q755	C2	QR551	G2
IC512	F2	IC355	H3	IC751	B2	IC955	C4	Q501	H1	Q651	D3	Q801	B1		
IC514	G3	IC356	H3	IC753	C2	IC956	C4	Q502	G1	Q653	C1	Q802	B1		
IC517	F1	IC402	G3	IC754	A2	IC957	D4	Q503	G1	Q654	C1	Q803	B2		
IC518	F2	IC403	H4	IC755	A2	IC958	D3	Q504	F1	Q656	C2	Q805	C1		



## F6: V IN P.C. BOARD (VEP83397B: 450 (NTSC), VEP83397A: Japan only)

REF	LOC	REF	LOC	REF	LOC	REF	LOC	REC	LOC	REC	LOC	REC	LOC	REC	LOC
IC101	14	IC451	12	IC602	D2	IC953	D4	Q756	A1	TP701	A2	VR512	G2	VR952	D3
IC102	14	IC456	11	IC603	E2	IC954	C4	Q804	B1	TP751	A2	VR513	F1	X402	G3
IC103	15	IC457	H2	IC604	D3	P1	G5	QR701	C3	TP801	B1	VR514	E1	X501	F2
IC104	14	IC458	H2	IC606	D2	P2	D5	QR702	C2	TP951	D4	VR515	F1		
IC154	E4	IC459	11	IC607	D3	Q352	H3	QR751	C2	TP952	E3	VR516	F1		
IC156	F4	IC502	H3	IC608	D1	Q452	11	QR801	C1	VL601	D2	VR601	D2		
IC201	D4	IC503	G3	IC752	A2	Q454	H1	TG1	12	VR301	J3	VR602	E2		
IC204	D4	IC504	G1	IC758	C2	Q509	G1	TG2	G2	VR351	12	VR701	A2		
IC207	C4	IC505	G1	IC759	A2	Q512	F1	TG3	E4	VR451	12	VR702	C1		
IC208	C4	IC507	F2	IC802	A1	Q514	E1	TG4	E1	VR452	H2	VR703	B2		
IC251	B3	IC508	G2	IC805	A1	Q515	G1	TG5	C1	VR453	1	VR704	C2		
IC252	B4	IC509	F2	IC808	C1	Q601	D2	TG6	F4	VR454	1	VR751	A1		
IC253	A3	IC510	G2	IC851	A4	Q602	D2	TP351	13	VR501	H1	VR752	C1		
IC255	A3	IC513	H2	IC901	B5	Q603	D2	TP501	F2	VR502	H1	VR753	A1		
IC303	14	IC515	F1	IC902	A5	Q652	C3	TP502	G2	VR503	G2	VR754	C2		
IC351	13	IC516	F1	IC911	E4	Q655	C1	TP503	H1	VR504	H1	VR801	B1		
IC352	13	IC552	F3	IC912	E4	Q657	C2	TP504	G3	VR505	F1	VR802	B1		
IC353	J3	IC553	F4	IC913	E3	Q658	C2	TP601	E2	VR507	G1	VR803	B1		
IC401	G3	IC555	F3	IC951	C3	Q704	C3	TP602	E3	VR510	F1	VR804	C1		
IC450	H2	IC601	D2	IC952	D4	Q754	B2	TP603	D2	VR511	G1	VR951	D4		

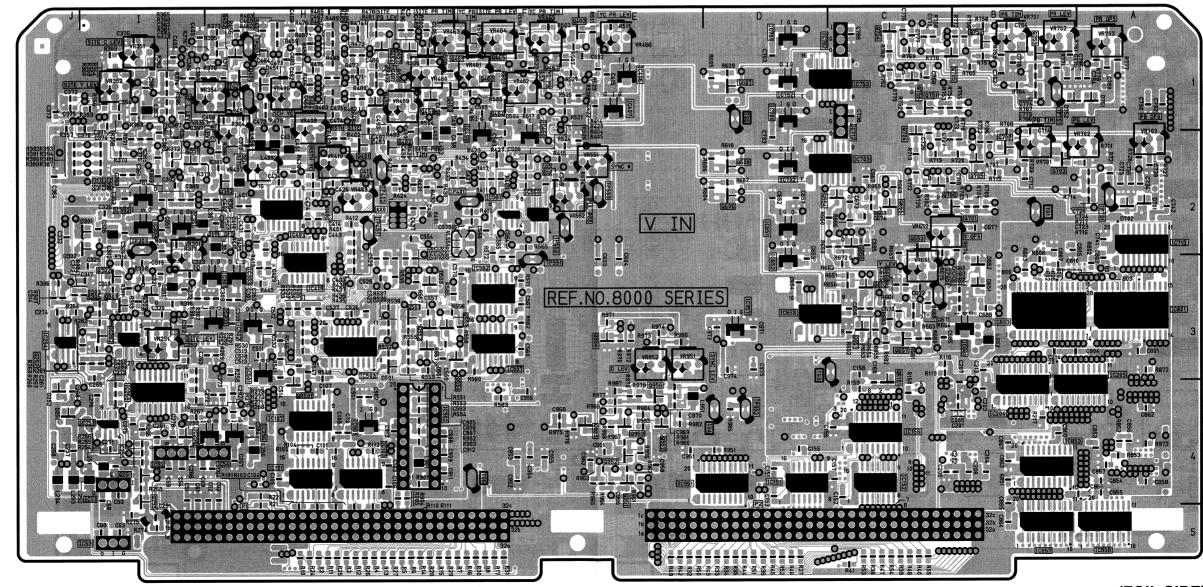




# F6: V IN P.C. BOARD (VEP83398A: 450 (PAL))

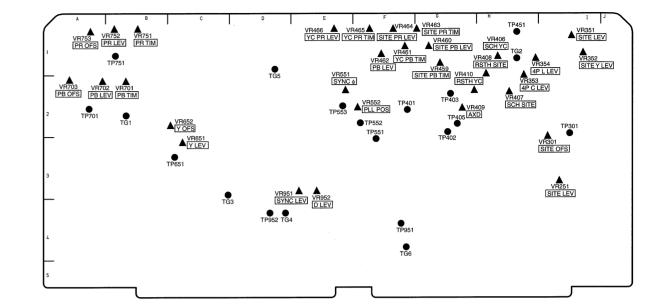
REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC	REF	LOC
IC101	H4	IC301	H3	IC503	G3	IC752	D1	Q302	13	Q462	F1	Q653	C2	Q754	C1
IC103	G4	IC302	H3	IC557	F3	IC753	C1	Q303	13	Q463	G1	Q654	C2	Q755	C1
IC107	H4	IC309	12	IC560	F2	IC801	A3	Q351	12	Q464	F1	Q655	C2	Q756	C1
IC151	D4	IC351	12	IC561	F2	IC803	B3	Q352	H2	Q465	F1	Q656	C2	Q951	E4
IC152	C4	IC352	12	IC562	F3	IC853	B4	Q401	G2	Q467	F1	Q657	C3	Q952	E4
IC156	C4	IC353	H3	IC651	D2	IC857	B5	Q402	G2	Q551	G3	Q701	C2	Q953	E4
IC204	B4	IC401	H2	IC652	D3	IC858	A5	Q451	H1	Q552	G3	Q702	B2	Q954	E3
IC205	A4	IC406	E1	IC653	D3	IC901	G4	Q452	H1	Q553	G3	Q703	B2	Q955	E4
IC252	13	IC407	E1	IC661	B3	IC951	D4	Q453	G1	Q554	G3	Q704	C2	Q956	E4
IC254	J3	IC419	H3	IC701	D1	IC957	D3	Q454	G1	Q606	D2	Q705	B2	Q957	E4
IC255	H4	IC459	F2	IC702	D2	Q251	14	Q457	G1	Q607	D1	Q706	C2	QR151	C4
IC256	H4	IC460	F2	IC703	C2	Q252	13	Q459	G1	Q608	D2	Q751	C1	QR501	H4
IC257	14	IC501	H3	IC713	A2	Q253	14	Q460	F1	Q651	C3	Q752	B1		
IC258	14	IC502	H3	IC751	D1	Q301	13	Q461	F1	Q652	C3	Q753	B1		

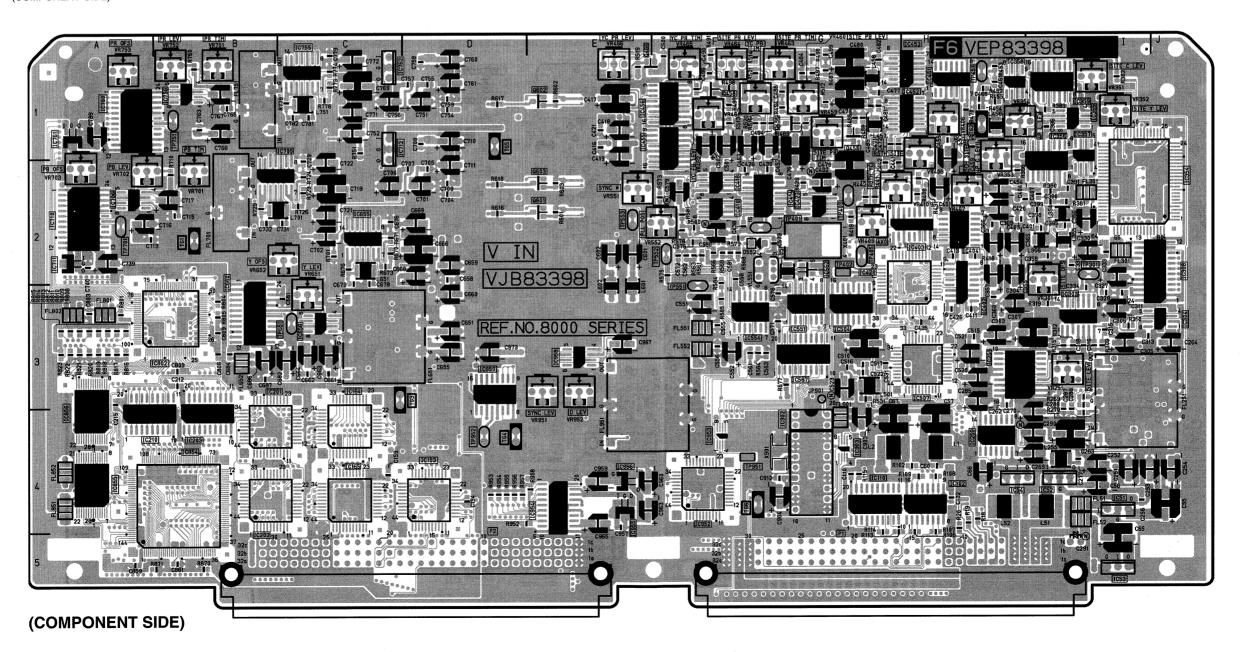
(FOIL SIDE)



#### F6: V IN P.C. BOARD (VEP83398A: 450 (PAL))

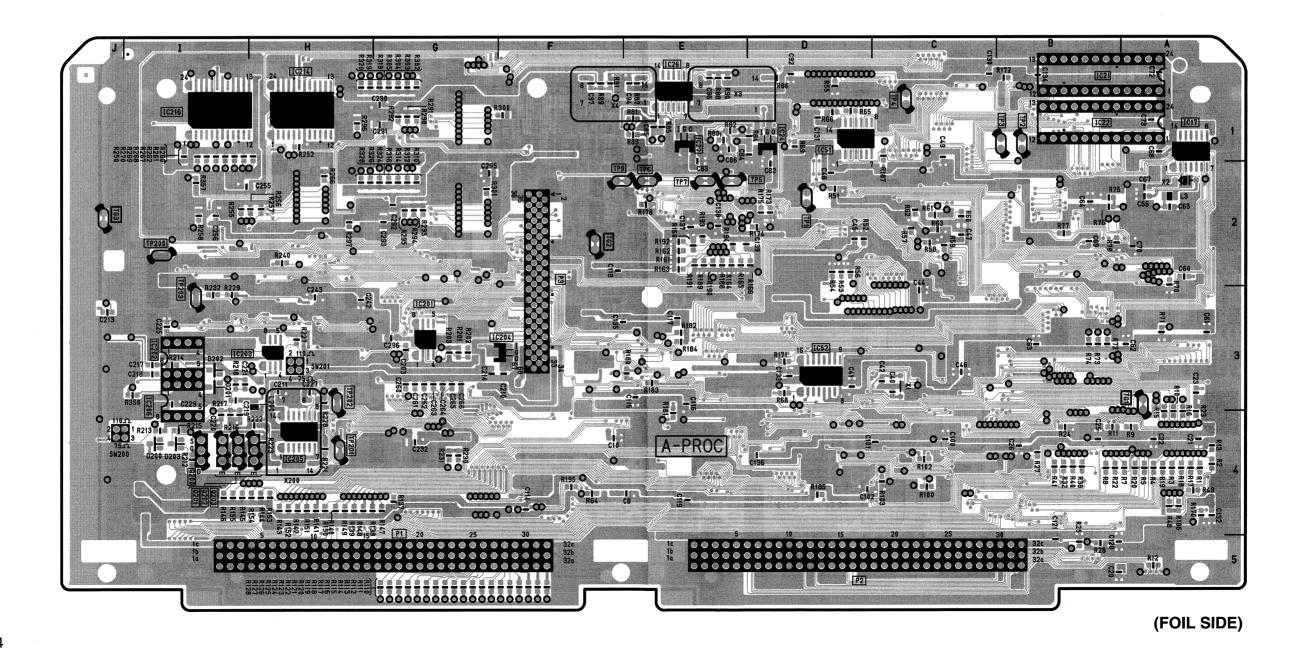
REF	LOC	REC	LOC										
IC102	H4	IC402	H2	IC552	G2	IC902	G4	TG3	C3	VR351	11	VR652	C2
IC110	G4	IC403	H2	IC554	F3	IC903	G4	TG4	D4	VR352	1	VR701	B2
IC153	D4	IC404	H2	IC567	G3	IC952	F4	TG5	D1	VR353	H1	VR702	A2
IC164	C4	IC410	F2	IC655	C2	IC953	F4	TG6	F4	VR354	H1	VR703	A2
IC165	C4	IC414	F2	IC656	C3	IC954	E4	TP301	12	VR406	H1	VR751	B1
IC201	B4	IC418	F2	IC660	B3	IC955	E4	TP401	F2	VR407	H2	VR752	B1
IC202	B4	IC423	G2	IC705	B2	IC956	E4	TP402	G2	VR408	H1	VR753	A1
IC203	B4	IC428	H2	IC706	A2	IC958	E3	TP403	G2	VR409	G2	VR951	E3
IC210	A4	IC451	H1	IC710	A2	IC959	D3	TP405	G2	VR410	G2	VR952	E3
IC251	H3	IC452	H1	IC711	A2	P1	G5	TP451	H1	VR459	G1	X401	G2
IC259	H4	IC453	H1	IC712	C1	P2	D5	TP551	F3	VR460	G1	X901	G4
IC303	13	IC455	F1	IC755	C1	Q455	G1	TP552	F2	VR461	F1		
IC304	J3	IC456	F1	IC756	B1	Q456	G1	TP553	E2	VR462	F1		
IC308	J2	IC504	G3	IC760	A1	Q458	F1	TP651	C3	VR463	G1		
IC354	12	IC507	H3	IC761	A1	Q466	E1	TP701	A2	VR464	F1		
IC355	l1	IC51	14	IC762	C1	Q601	E2	TP751	B1	VR465	F1		
IC356	12	IC52	14	IC802	B3	Q602	E1	TP951	F4	VR466	E1		
IC357	l1	IC53	15	IC854	B4	Q603	E2	TP952	D4	VR551	E2		
IC358	H1	IC54	H4	IC855	A4	TG1	B2	VR251	13	VR552	F2		
IC359	l1	IC551	G3	IC856	A3	TG2	H1	VR301	12	VR651	C3		





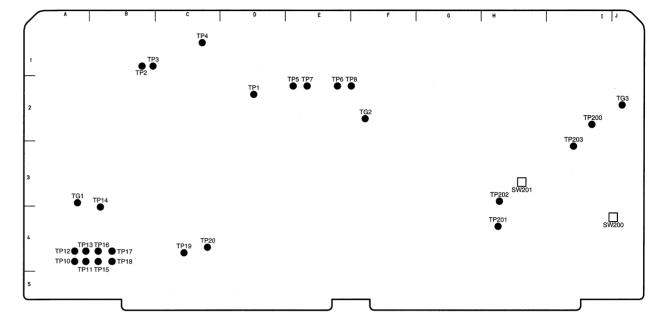
F7: A PROC P.C. BOARD (VEP84292A: 450, VEP84292D: 440)

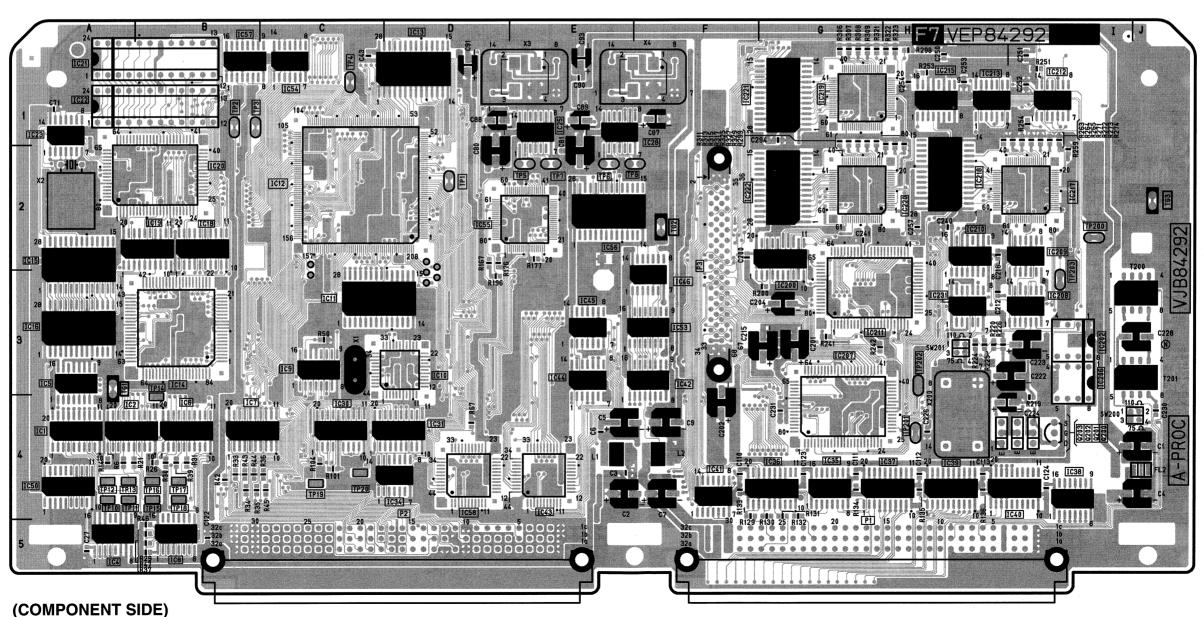
REF	LOC
IC17	A1
IC201	G3
IC203	H3
IC204	F3
IC205	H4
IC214	H1
IC216	11
IC24	D1
IC26	E1
IC27	E1
IC51	D1
IC52	D3



#### F7: A PROC P.C. BOARD (VEP84292A: 450, VEP84292D: 440)

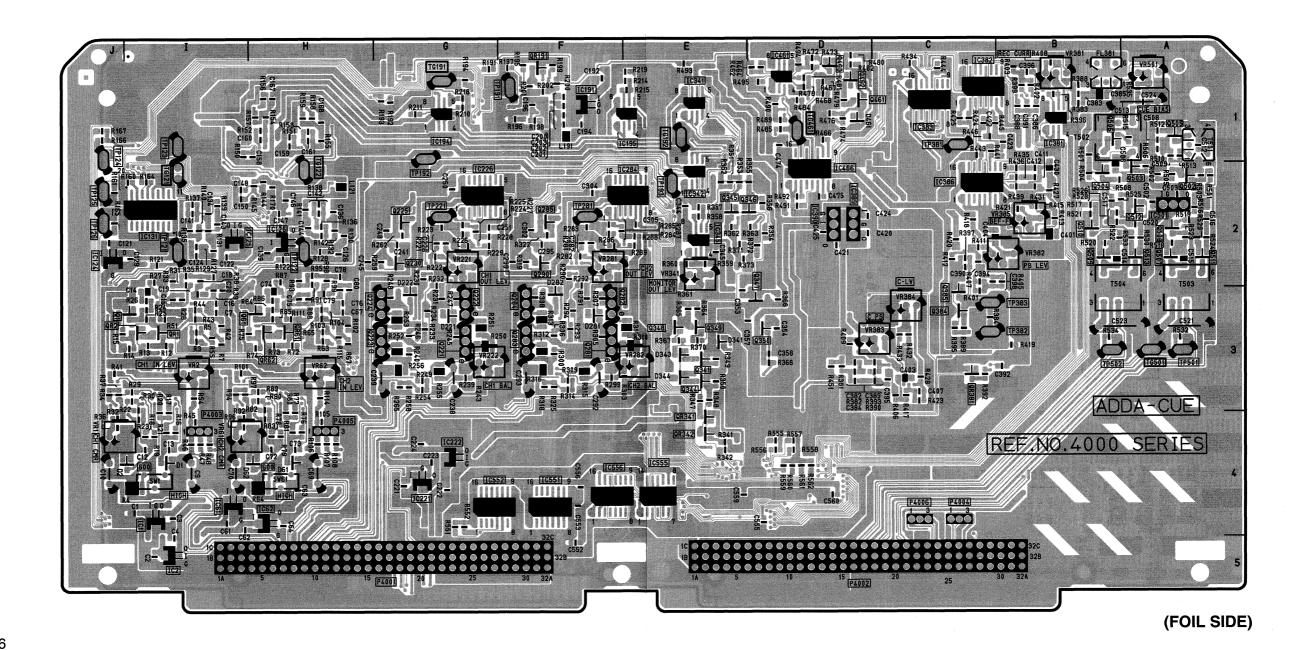
REF	LOC	REF	LOC	REF	LOC	REC	LOC	REC	LOC	REC	LOC
IC1	A4	IC211	G3	IC37	H4	IC7	C4	TP14	B4	X200	H4
IC10	D3	IC212	11	IC38	14	IC8	B5	TP15	B4	Х3	D1
IC11	C3	IC213	H1	IC39	H4	IC9	C3	TP16	B4	X3A	E1
IC12	C2	IC215	H1	IC4	A5	P1	G5	TP17	B4	X4	E1
IC13	D1	IC217	12	IC40	14	P2	D5	TP18	B4	X4A	F1
IC14	B3	IC218	H2	IC41	F4	P3	F2	TP19	C4		
IC15	A2	IC219	G1	IC42	F3	Q200	14	TP2	B1		
IC16	A3	IC22	A1	IC43	E4	Q201	14	TP20	C4		
IC18	B2	IC220	G2	IC44	E3	Q202	14	TP200	12		
IC19	B2	IC221	G1	IC45	E3	Q203	H4	TP201	H4		
IC2	A4	IC222	G2	IC46	F3	SW200	J4	TP202	H3		
IC20	B2	IC23	A1	IC5	A3	SW201	H3	TP203	13		-
IC200	G2	IC231	H3	IC50	A4	TG1	A3	TP3	C1		
IC202	13	IC25	E1	IC53	F3	TG2	F2	TP4	C1		
IC206	13	IC28	E1	IC54	C1	TG3	J2	TP5	E2		
IC207	G4	IC30	C4	IC55	E2	TP1	D2	TP6	E2		
IC208	13	IC31	D4	IC56	E2	TP10	A4	TP7	E2		
IC209	12	IC34	D4	IC57	C1	TP11	A4	TP8	F2		
IC21	A1	IC35	G4	IC58	D4	TP12	A4	X1	C3		
IC210	H2	IC36	G4	IC6	B4	TP13	A4	X2	A2		





# F8: ADDA/CUE P.C. BOARD (VEP84293A: NTSC, VEP84293B:PAL)

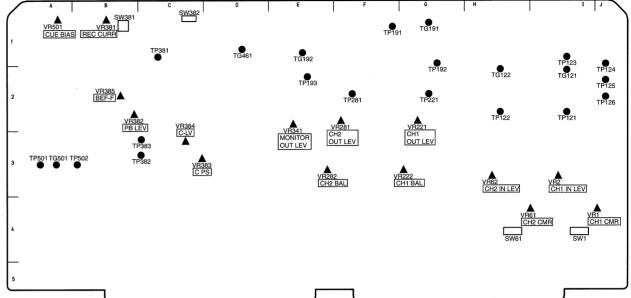
REF	LOC	REF	LOC	REF	LOC	REC	LOC	REC	LOC
IC4001	14	IC4284	E2	Q4001	13	Q4384	C3	Q4511	A2
IC4002	15	IC4341	E1	Q4061	H3	Q4385	C3	Q4512	A2
IC4061	14	IC4342	E2	Q4225	G2	Q4461	D1	Q4513	A2
IC4062	H4	IC4345	E2	Q4230	G2	Q4462	D1	QR4001	13
IC4124	J2	IC4381	B1	Q4285	F2	Q4463	D1	QR4002	13
IC4125	12	IC4382	C1	Q4290	F2	Q4502	A2	QR4061	H3
IC4126	H2	IC4383	C1	Q4341	E3	Q4503	A2	QR4062	H3
IC4131	12	IC4386	C2	Q4344	E3	Q4504	B2	QR4191	F1
IC4191	F1	IC4461	D1	Q4345	E2	Q4505	A1	QR4341	E4
IC4194	G1	IC4466	D2	Q4346	D2	Q4506	B1	QR4342	E4
IC4195	E1	IC4551	F4	Q4347	D3	Q4507	A2	QR4381	C3
IC4221	G4	IC4552	G4	Q4348	E3	Q4508	A2		
IC4222	G4	IC4555	E4	Q4349	E3	Q4509	B2		
IC4226	G2	IC4556	F4	Q4350	D3	Q4510	B2		

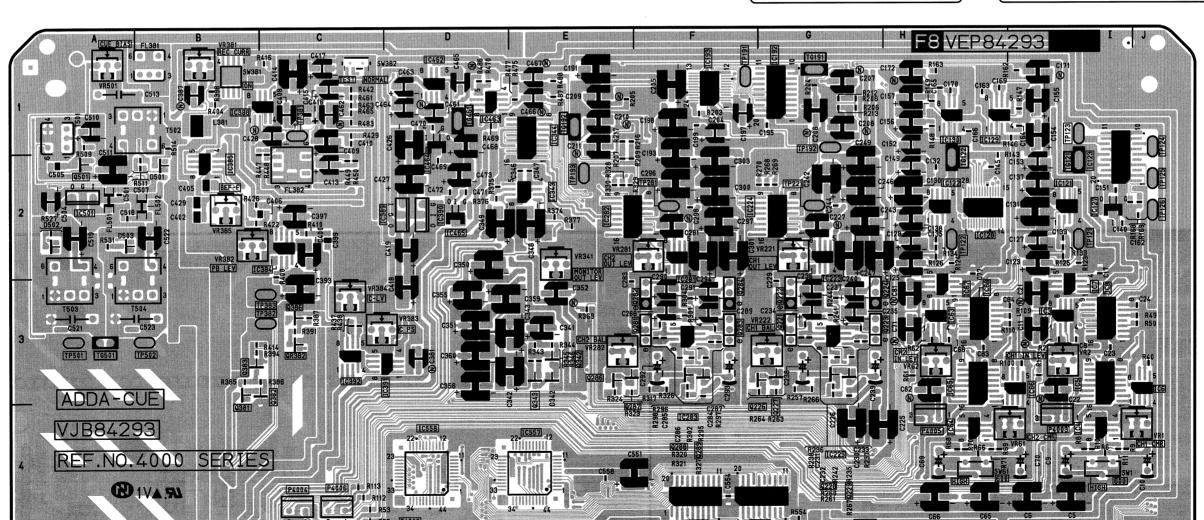


# F8: ADDA/CUE P.C. BOARD (VEP84293A: NTSC, VEP84293B:PAL)

REF	LOC										
IC4003	13	IC4193	F1	IC4501	A2	Q4282	F3	TG4122	H2	TP4502	B3
IC4004	14	IC4223	G2	IC4553	F4	Q4283	F3	TG4191	G1	VR4001	J4
IC4005	13	IC4224	G2	IC4554	G4	Q4284	F3	TG4192	E1	VR4002	13
IC4006	J3	IC4225	G3	IC4557	E4	Q4286	E3	TG4461	D1	VR4061	14
IC4007	13	IC4281	F2	IC4558	D4	Q4287	E3	TG4501	A3	VR4062	H3
IC4008	13	IC4282	E2	P4001	G5	Q4288	F3	TP4121	12	VR4221	G2
IC4063	H3	IC4283	F3	P4002	D5	Q4289	F3	TP4122	H2	VR4222	G3
IC4064	H4	IC4343	E2	P4003	14	Q4342	E3	TP4123	11	VR4281	F2
IC4065	H3	IC4344	E1	P4004	C4	Q4343	E3	TP4124	J1	VR4282	E3
IC4066	13	IC4384	C2	P4005	H4	Q4381	B3	TP4125	J2	VR4341	E2
IC4067	H3	IC4385	B2	P4006	C4	Q4382	C3	TP4126	J2	VR4381	B1
IC4068	H3	IC4388	C1	Q4221	G3	Q4383	B3	TP4191	F1	VR4382	B2
IC4121	12	IC4389	D2	Q4222	G3	Q4386	C3	TP4192	G1	VR4383	C3
IC4122	H2	IC4390	D2	Q4223	G3	Q4501	A2	TP4193	E2	VR4384	C3
IC4123	12	IC4391	D3	Q4224	G3	QR4382	C3	TP4221	G2	VR4385	B2
IC4127	12	IC4392	C3	Q4226	F3	SW4001	14	TP4281	F2	VR4501	A1
IC4128	H2	IC4462	D1	Q4227	G3	SW4061	H4	TP4381	C1		
IC4129	H1	IC4463	D1	Q4228	G3	SW4381	B1	TP4382	C3		
IC4130	H1	IC4464	D1	Q4229	G3	SW4382	C1	TP4383	C3		
IC4192	G1	IC4465	D2	Q4281	F3	TG4121	12	TP4501	A3		

(COMPONENT SIDE)



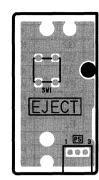


# FRONT CPU P.C. BOARD (VEP86256A: 450, VEP86256B:440) and EJECT P.C. BOARD (VEP80A09A)

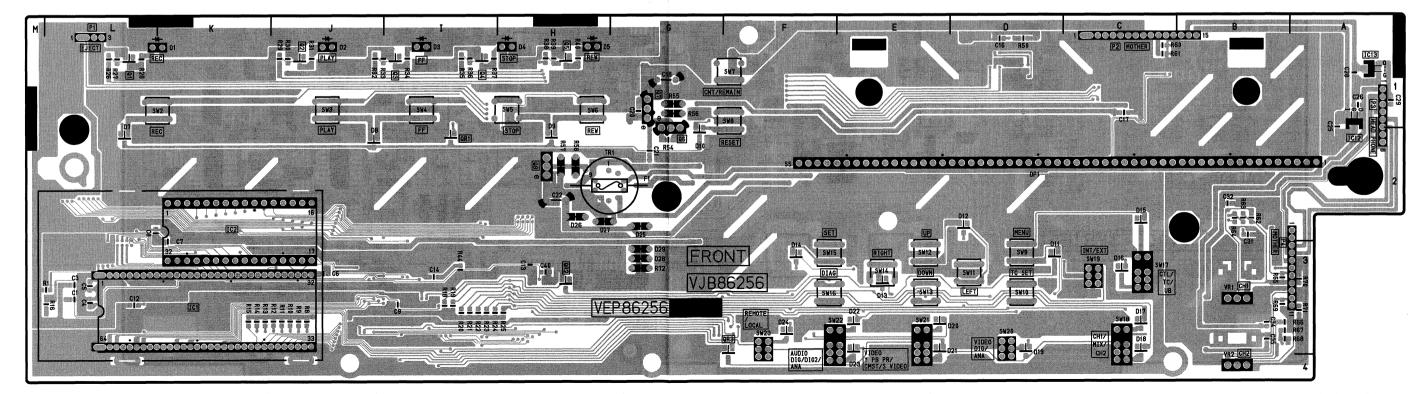
REF	LOC
IC12	A1
IC13	A1
Q1	L1
Q2	J1
Q3	11
Q4	l1
Q5	H1
QR1	12
QR2	H3
QR3	F4







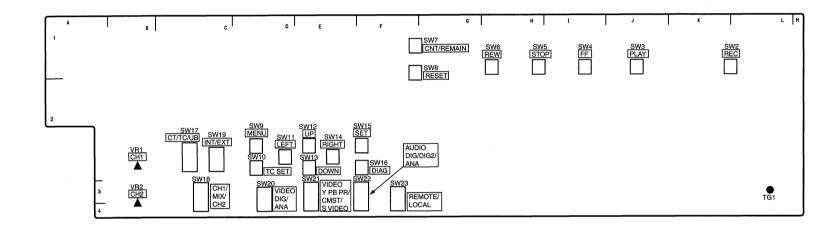
(FOIL SIDE) (COMPONENT SIDE)

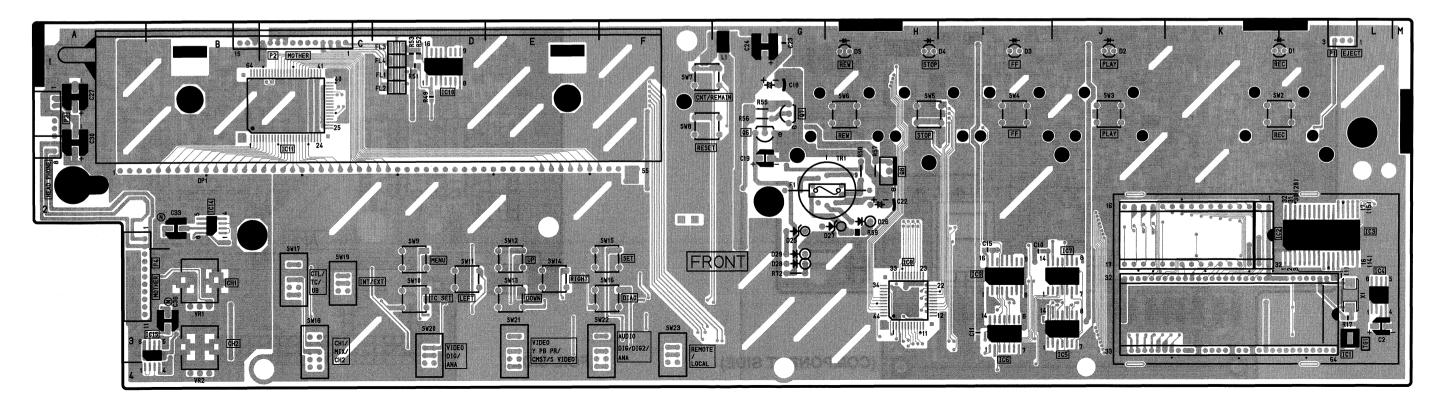


# FRONT CPU P.C. BOARD (VEP86256A: 450, VEP86256B:440)

REF	LOC	REF	LOC	REF	LOC	REF	LOC
IC1	L3	P2	C1	SW18	C3	TG1	L3
IC10	D1	P3	A1	SW19	C3	VR1	B3
IC11	C1	P4	A2	SW2	L1	VR2	B3
IC14	B2	Q6	G2	SW20	D3	X1	L3
IC15	B3	Q7	G1	SW21	E3		
IC2	K2	Q8	H2	SW22	F3		
IC3	L2	SW10	D3	SW23	F3		
IC4	L3	SW11	D3	SW3	J1		
IC5	J3	SW12	E3	SW4	l1		
IC6	13	SW13	E3	SW5	H1		
IC7	J3	SW14	E3	SW6	H1		
IC8	H3	SW15	F3	SW7	F1		
IC9	13	SW16	F3	SW8	F1		
P1	L1	SW17	C3	SW9	D3		

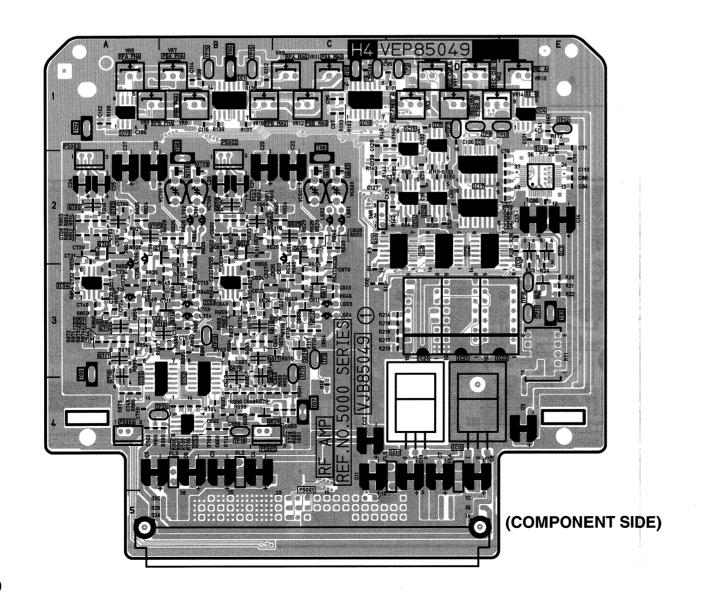
(COMPONENT SIDE)

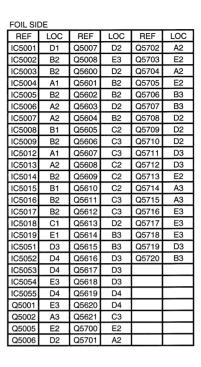


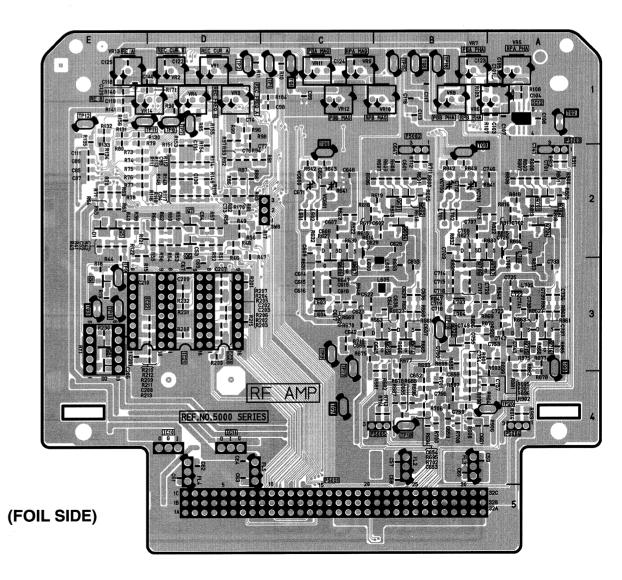


# RF AMP P.C.BOARD (VEP85049A)

COMPONENT SIDE						
REF	LOC	REF	LOC			
IC5010	D4	TP5011	E1			
IC5011	D4	TP5012	E1			
IC5020	D3	TP5015	B1			
IC5021	D3	TP5016	B1			
IC5022	E3	TP5017	C3			
P5001	C5	TP5018	B4			
P5002	B2	TP5019	B3			
P5003	A2	TP5020	A4			
P5004	A4	VC5600	C2			
P5005	B4	VC5601	C2			
SW5008	C2	VC5700	B2			
TG5001	C1	VC5701	B2			
TG5002	A1	VR5001	D1			
TG5003	E3	VR5002	D1			
TG5005	B1	VR5003	D1			
TG5006	C2	VR5004	D1			
TG5007	C4	VR5005	A1			
TG5008	B2	VR5006	A1			
TG5009	A3	VR5007	B1			
TP5001	C1	VR5008	B1			
TP5002	D1	VR5009	C1			
TP5003	C3	VR5010	B1			
TP5007	D1	VR5011	C1			
TP5008	D1	VR5012	C1			
TP5009	E3	VR5013	E1			
TP5010	E3	VR5014	D1			



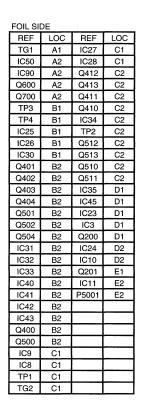


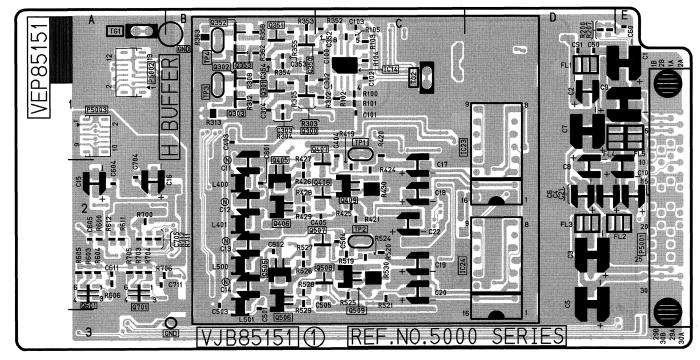


## **HEAD BUFF P.C.BOARD (VEP85151A)**

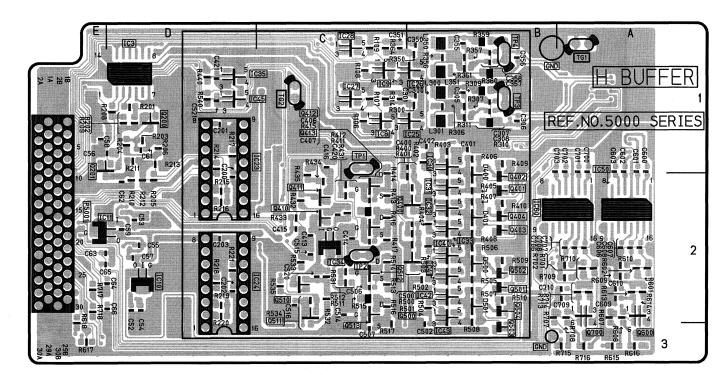
COMPO	NENT S	DE
REF	LOC	
IC14	C1	
IC23	D1	
IC24	D2	
P5001	E2	
P5002	A1	
P5003	A1	
Q300	B1	
Q301	B1	
Q302	B1	
Q303	B1	
Q350	B1	
Q351	B1	
Q352	B1	
Q353	B1	
Q405	B2	
Q406	B2	l
Q407	C2	
Q408	C2	
Q409	C2	
Q505	B2	l
Q506	B2	
Q507	C2	
Q508	C2	
Q509	C2	l
Q601	A2	
Q701	A2	l
TG1	A1	l
TG2	C1	
TP1	C1	
TP2	C2	

1	A 🖂 B 🗍 TP4 TG1 🗍 TP3	C TG2	D	E
		□ TP1		
2		□ TP2		
3				





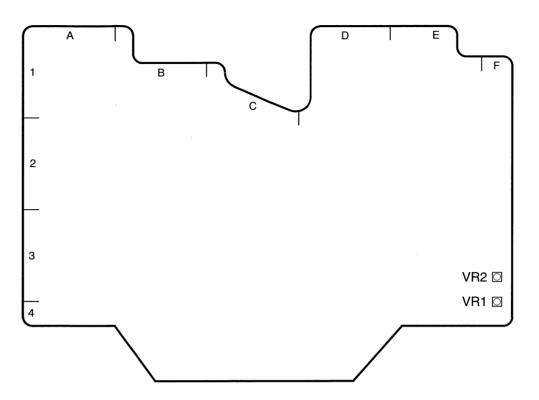


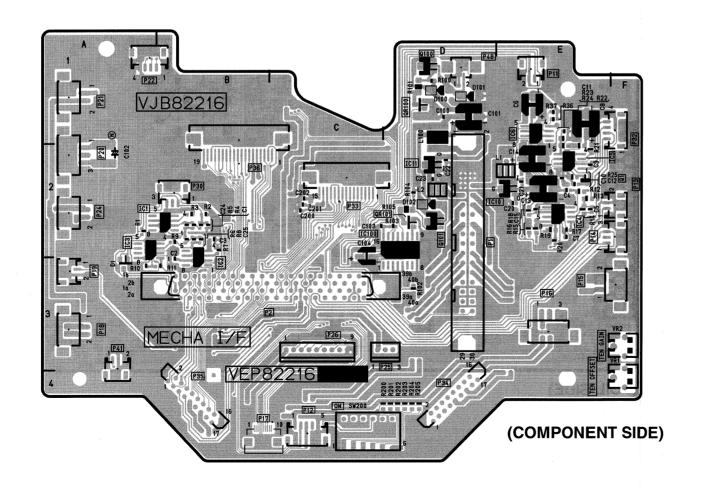


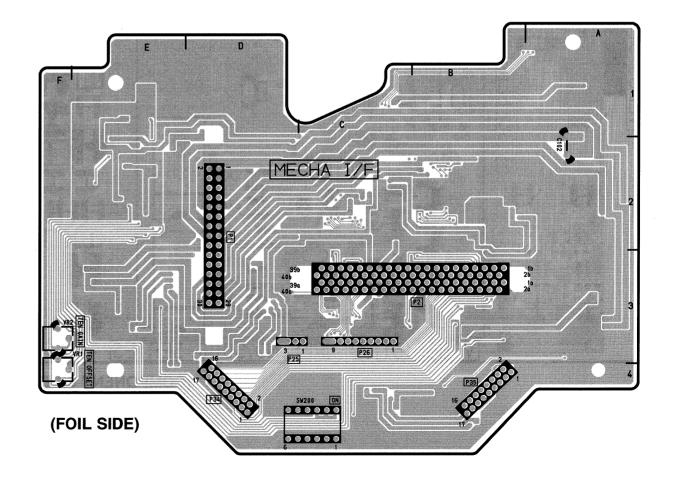
(FOIL SIDE)

# **MECHA IF P.C.BOARD (VEP82216A)**

COMPONENT SIDE						
REF	LOC	REF	LOC			
IC1	B2	P33	C2			
IC2	B3	P36	B1			
IC3	A2	P41	A3			
IC4	E2	P48	D1			
IC5	E2	Q1	E2			
IC6	E1	Q100	D1			
IC10	E2	Q101	D2			
IC11	D2	QR100	D1			
IC100	D2	QR101	D2			
P1	D2	SW200	C4			
P2	C3	VR1	F4			
P11	E1	VR2	F3			
P12	C4					
P13	F2					
P14	F2					
P15	F3					
P16	E3					
P17	B4					
P18	A3					
P19	A3					
P20	A2					
P21	A1					
P22	A1					
P24	A2					
P25	C3					
P26	C3					
P30	B2					
P32	F1					

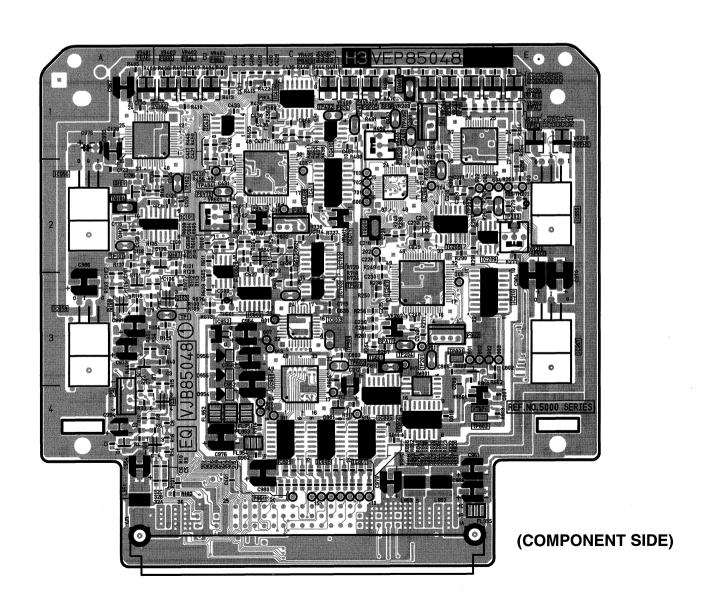


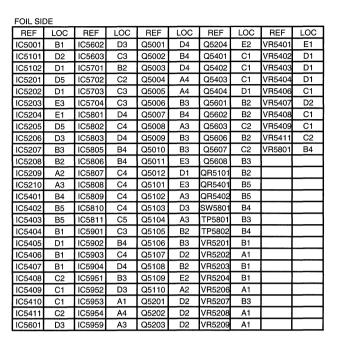


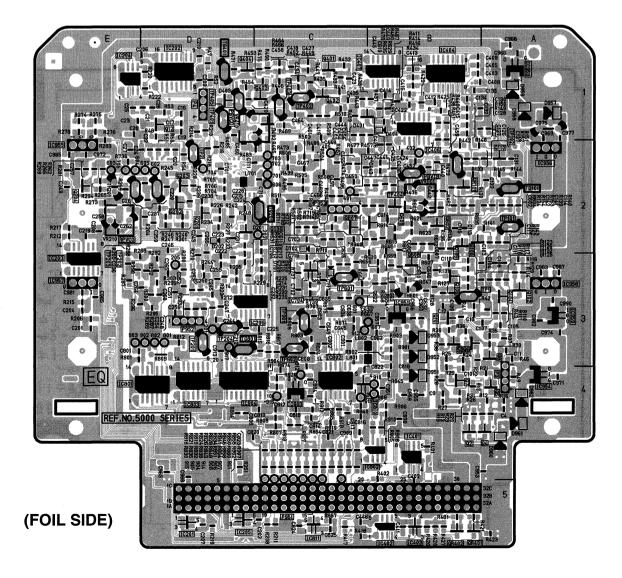


# H3: EQ P.C. BOARD (VEP85048A)

COMPONENT SIDE							
REF	LOC	REF	LOC				
IC5955	E2	TP5405	D1				
IC5956	A2	TP5601	C3				
IC5957	E3	TP5602	C3				
IC5958	А3	TP5901	C3				
P5003	A3	VR5210	E2				
P5004	D1	VR5410	D1				
P5951	C5	VR5601	B2				
P5952	D3						
P5953	C2						
TG5101	A2						
TG5201	C2						
TG5401	D1						
TG5801	D3						
TP5001	B3						
TP5002	D2						
TP5101	A2						
TP5102	B2						
TP5201	D3						
TP5202	D2						
TP5203	E2						
TP5204	D3						
TP5401	D1						
TP5402	C1						
TP5403	C1						
TP5404	B2						







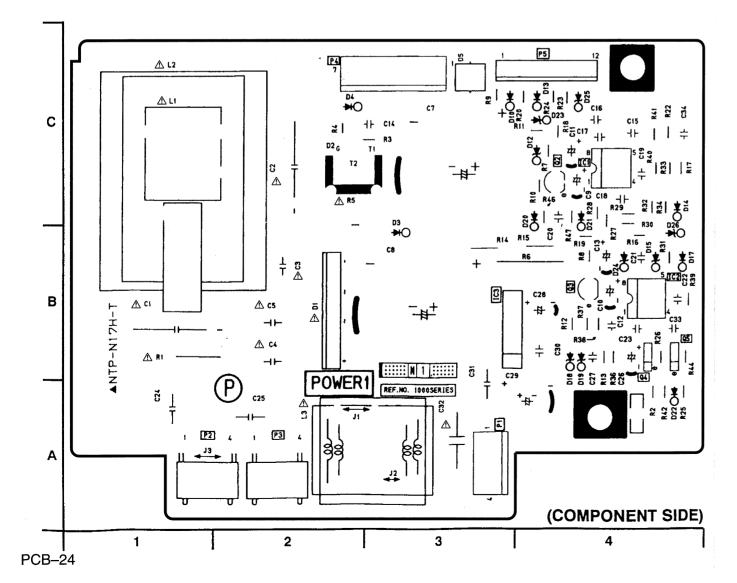
#### POWER 1 P.C. BOARD (VEP81074A: NTSC)

POWER 1 (COMPONENT SIDE)					
Transistors		Connector			
Q1002	C-4	P1001	A-3		
Q1003	B-4	P1002	A-1		
Q1004	B-4	P1003	A-2		
Q1005	B-4	P1004	C-2		
Integrated	Circuit	P1005	C-3		
IC1001	C-4				
IC1002	B-4				
IC1003	B-3				

ADDRESS INFORMATION

JAPAN ONLY 交換するときは、安全及び性能維持の

IMPORTANT SAFETY NOTICE:
COMPONENTS IDENTIFIED WITH THE MARK A HAVE THE SPECIAL
CHARACTERISTICS FOR SAFETY.
WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

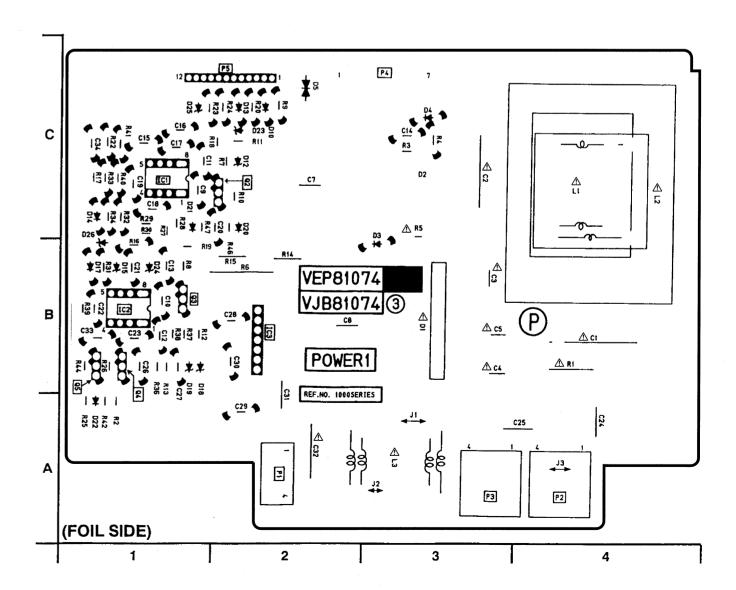


POWER 1 (FOIL SIDE)					
Transistors		Connector			
Q1002	C-2	P1001	A-2		
Q1003	B-1	P1002	A-4		
Q1004	B-1	P1003	A-3		
Q1005	B-1	P1004	C-3		
Integrated Circuit		P1005	C-1		
IC1001	C-1				
IC1002	B-1				
IC1003	B-2				

ADDRESS INFORMATION

#### JAPAN ONLY

□□□□ 内は充電部です。AC100Vが加わっておりますので点検、修理のときは



#### POWER 2 P.C. BOARD (VEP81075A: NTSC)

POWER 2 (FOIL SIDE)					
Transistors		Adjustment			
Q1011	C-2	VR1001	C-1		
Q1012	C-4	VR1002	C-1		
Q1013	C-5	Connector			
Q1014	C-1	P1011	A-2		
Q1015	C-1	P1012	A-2		
Q1016	C-4	P1013	A-3		
Q1017	B-5	P1014	A-5		
Q1018	B-5	P1015	C-2		
Q1019	B-2	P1016	C-4		
Integrated Circuit					
IC1011	B-1				
IC1012	B-1				

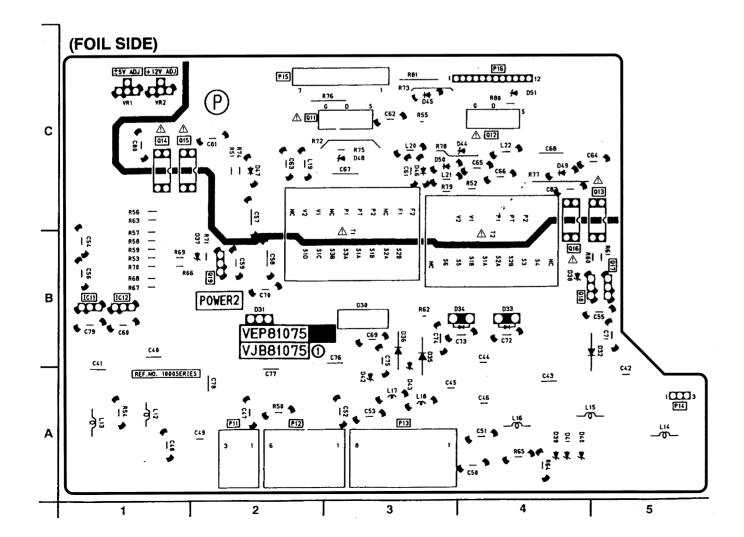
ADDRESS INFORMATION

IMPORTANT SAFETY NOTICE:

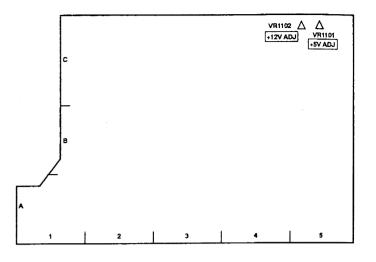
COMPONENTS IDENTIFIED WITH THE MARK ⚠ HAVE THE SPECIAL

CHARACTERISTICS FOR SAFETY.

WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.



POWER 2 (COMPONENT SIDE)					
Transistors		Adjustment			
Q1011	C-3	VR1001	C-5		
Q1012	C-2	VR1002	C-5		
Q1013	C-1	Connector			
Q1014	C-5	P1011	A-4		
Q1015	C-4	P1012	A-3		
Q1016	C-2	P1013	A-3		
Q1017	B-1	P1014	A-1		
Q1018	B-1	P1015	C-3		
Q1019	B-4	P1016	C-2		
Integrated Circuit					
IC1011	B-5		-		
IC1012	B-5				

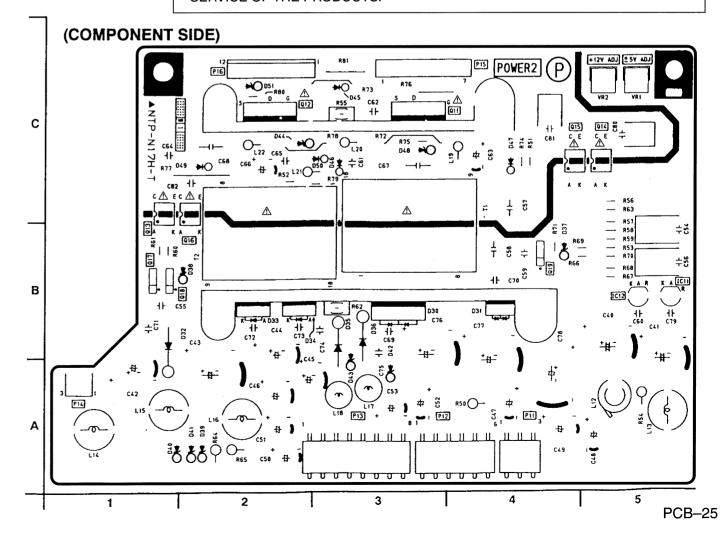


ADDRESS INFORMATION

#### CAUTION

THE MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.

PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.



## POWER 1 P.C. BOARD (VEP81183A: PAL)

#### POWER 2 P.C. BOARD (VEP81184B: PAL)

IMPORTANT SAFETY NOTICE:

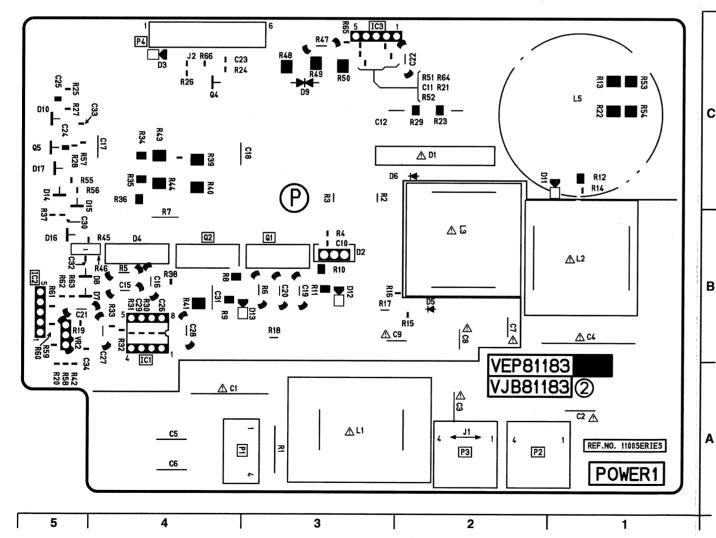
COMPONENTS IDENTIFIED WITH THE MARK A HAVE THE SPECIAL

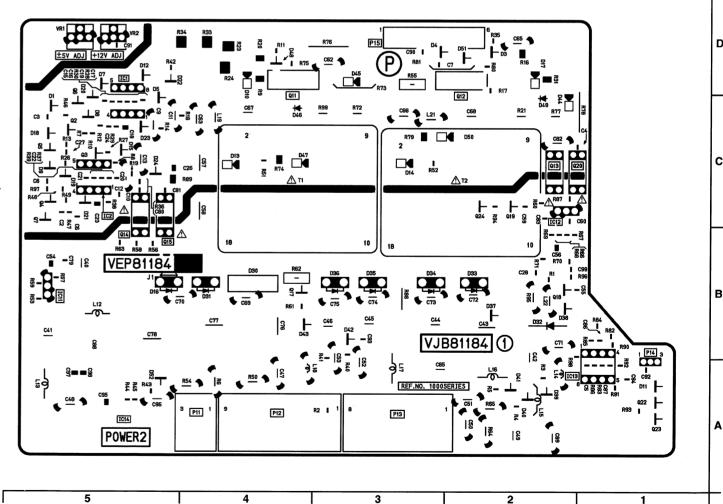
CHARACTERISTICS FOR SAFETY.

WHEN REPLACING ANY OF THESE COMPONENTS, USE ONLY THE SAME TYPE.

CAUTION

THE MARK INDICATES THE PRIMARY CIRCUIT TO DISTINGUISH THE PRIMARY FROM THE SECONDARY CIRCUIT.
PAY ATTENTION NOT TO RECEIVE AN ELECTRIC SHOCK DURING REPAIR AND SERVICE OF THE PRODUCTS.





(FOIL SIDE) (FOIL SIDE)